Aalto University
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EXPLORING VIRTUAL PLANNING TALK

Case Study: Budgeting Under Remote Work and COVID-19 in Three Global Manufacturing Organizations

Master's Thesis
Miki Toivonen
Aalto University School of Business
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Aalto University
School of Business

Aalto University, P.O. BOX 11000, 00076 AALTO
www.aalto.fi

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Author Miki Toivonen

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Abstract

A modern and globally operating organization is navigating in the middle of disruptive forces, requiring continuous follow-up. Local knowledge on how to tackle these forces with innovations exists in the field: upside and downside market insights can be discovered from business units operating with the external environment. The knowledge must flow from an operational unit to executives without constraints so that a strategy can be adjusted when challenges arise. Modern budgeting methods, seeking a truthful view of a future with formal and informal planning talk between controllers and business units, are considered great mediums for distributing local knowledge in management accounting research.

However, astonishingly, COVID-19 emerging to an increasing extent in March 2020 forced organizations to operate virtually. New circumstances required organizations also to re-adjust their budgeting practices, not endangering important planning talk. Hybrid workshops, iterative lunch breaks, and sudden collisions at aisles shifted to online meetings, e-mails, and phone calls.

First, the empirically-grounded thesis illustrates how virtual settings may function relatively well when planning in the short-term. Short-term income and cost forecasts are conducted only with minor difficulties in global organizations remotely due to experienced controllers and advanced digital collaboration tools. However, "the new normal" in planning cannot perhaps replace hybrid conditions, a mix of physical and virtual settings, permanently in organizations. Value-adding local knowledge sharing is based on trust that can be pursued more deeply in formal and informal face-to-face discussions, and its distribution is sometimes incidental by its nature. Particularly, demanding strategic development projects and occasional break room meetings in versatile groups are endangered in virtual reality. *The business understanding behind budgets can transform more obscure in virtual settings without further developments in long-term digital planning discussion.*

Keywords Budgeting, COVID-19, Information Distribution, Local Knowledge, Organizational Learning, Planning, Planning Talk, Virtual Settings

Aalto-yliopisto
Kauppakorkeakoulu

Aalto-yliopisto, PL 11000, 00076 AALTO
www.aalto.fi

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Tiivistelmä

Moderni ja globaali yritys navigoi keskellä monia repiviä muutoksia, jotka vaativat jatkuvaa seurantaa. Paikallinen tietotaito kuinka selvitä näistä haasteista sijaitsee kentällä: innovaatiot löytyvät liiketoimintayksiköistä, jotka kommunikoivat jatkuvasti ulkopuolisen ympäristön kanssa. Paikallisen tiedon tulee virrata liiketoiminnalta johdolle estottomasti, jotta organisaation strategiaa voidaan muokata nopeasti tarpeen niin vaatiessa. Modernin budjetoinnin menetelmiä, jotka keskittyvät ennustamaan yrityksen ja sen toimintaympäristön tulevaisuuden mahdollisimman todenmukaisesti liiketoiminnan ja kontollereiden kanssa käytävien keskustelujen avulla, pidetään johdon laskentatoimen kirjallisuudessa toimivina menetelminä tiedon siirtymiseen.

Koronavirus (COVID-19), joka lähti leviämään kiihtyvällä vauhdilla maaliskuussa 2020, pakotti kuitenkin yllättäen kaikki yritykset operoimaan virtuaalisti. Pandemia pakotti yritykset myös mukauttamaan budjetointitapojaan, jotta tiedonsiirtyminen niihin ei vaarantuisi. Kokoukset, lounaskeskustelut ja satunnaiset tapaamiset käytävillä vaihtuivat virtuaalisiin tapaamisiin, sähköposteihin ja puhelinkeskusteluihin.

Aluksi empiirinen tutkielma havainnollistaa, kuinka virtuaalit olosuhteet voivat toimia suhteellisen hyvin liiketoiminnan ennustamisessa lyhyellä aikavälillä. Lyhyen aikavälin tuotto- ja kustannusennusteet laaditaan helposti ilman suurempia ongelmia etänä kokeneiden controllereiden ja kehittyneiden digitaalisten työkalujen turvin. Tutkimus kuitenkin lopulta osoittaa, että ennustamisen uudet olosuhteet eivät voi välttämättä korvata hybridiolosuhteita, fyysisen ja virtuaalin kanssakäymisen sekoitusta, ennustamisessa. Paikallisen tiedon jakaminen perustuu luottamukseen, joka voidaan saavuttaa paremmin paikan päällä käytävissä keskusteluissa ja sen jakaminen on luonteeltaan myös osin yllätyksellistä. Erityisesti vaativat kehitysprojektit ja satunnaiset tapaamiset taukohuoneissa eri sidosryhmien välillä ovat vaarassa virtuaaleissa olosuhteissa. *Pitkän aikavälin liiketoiminnan hahmottaminen budjettien taustalla saattaa vaikeutua virtuaaleissa olosuhteissa, jos tarvittavia kehitystoimenpiteitä ei tehdä digitaaliseen ennustekeskusteluun.*

Avainsanat Budjetointi, COVID-19, Ennustaminen, Ennuste keskustelut, Organisaatio oppiminen, Paikallinen tieto, Tiedon siirtyminen, Virtuaalit olosuhteet

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1 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

"Government, in cooperation with the President of the Republic, declares a state of emergency in Finland over coronavirus (COVID-19) outbreak" (16th March, Finnish Government). The announcement recommended the Finns avoid any necessary contact with other people to secure Finnish healthcare capacity. As an extreme measure, restaurants closed until mid-June 2020, and all mass events were canceled until the end of July 2020. The Finnish government highly recommended remote working in all industries, and as a result, over a million Finns, about 25% of the population, began working remotely (5th April 2020, Yle). Consequently, organizations transformed to be virtual, and employees were forced to find digital tools and ways to navigate through the markets that were already under constant change due to globalization and digitization. "A new normal" had begun.

Management accounting research considers controllers and their strategic business partnering role central when organizations attempt to cope with continually growing uncertainties (Dent, 1991; Goretzki et al., 2019). A management accountant can gain a powerful overview of an organization's business environment by sparring with business units. A controller can collect local knowledge to forecasts in a decentralized organization and eventually conduct valuable insights (Vaivio, 2004). Polanyi (1966) introduced the term local knowledge first in organizational research and defined that operational employees have gained insights "by doing things." They have gained local knowledge via their participation in certain practices and routines, i.e., "the events in the field" (Nonaka, 1994; Lubit, 2001; Vaivio, 2004).

The planning function of budgeting can be considered the most prominent tool for an organization that attempts to survive in today's disruptive environment (Kloot, 1997; Becker et al., 2016; Goretzki et al., 2016; Palermo, 2018; Henttu-Aho, 2018). Organizations trust especially modern budgeting methods when planning: beyond budgeting, rolling forecasts, and activity-based budgeting help to collect information from a business environment due to their inclusive nature (Henttu-Aho et al., 2013; Henttu-Aho, 2016; Goretzki et al., 2016; Henttu-Aho, 2018). A controller can learn from possible variances between reality and expected results with budgets, eventually helping management adjust strategy to be more responsive to market changes (Hansen et al., 2003). Especially, planning talk during budgeting helps release local

knowledge for an organization's use (Becker et al., 2016; Goretzki et al., 2016; Palermo, 2018; Henttu-Aho, 2018).

However, fluent planning talk between a business unit and a management accountant is not self-evident. For instance, a knowledge holder may not be willing to share information, or it is too difficult to share it due to its "sticky" nature (Brown et al., 2001; Vaivio, 2004). Also, to reveal a broad spectrum of local knowledge, an organization requires structured processes in place. For instance, Vaivio's (2004) case study in a UK-based manufacturing firm illustrates how provocative non-financial KPIs revealed business units' local knowledge only through comprehensive discussions and debates. If information distribution is not a simple process in physical circumstances, what happens when working in a virtual context that the COVID-19 has caused? The abnormal situation indeed calls for further exploratory case studies.

Planning talk is part of the general organizational learning process. It also includes other dimensions: knowledge acquisition, individual knowledge interpretation, and organizational memory (Huber, 1991). In the budgeting process, organizational learning plays an essential role in making an overall process successful. Kloot (1997) states that organizational learning is the way to answer internal and exogenous changes in organizations. Especially, planning talk should be highlighted and studied more as a part of the learning process. When local knowledge flows without constraints, it should ensure a better fit between an organization and its environment (Kloot, 1997; Henttu-Aho, 2018). An organization is responsible for providing a forum for learning where individuals could share their information, eventually mobilizing local knowledge (Nonaka, 1994). It remains hidden how organizations have attempted to secure planning talk in virtual settings.

Besides, all planning talk is not formalized since a business understanding is also achieved through casual discussions in break rooms and aisles of an organization (Barmeyer et al., 2019). The importance of informal discussions for organizational learning has been examined scientifically not long ago. However, the limited amount of research indicates that specific meetings' importance is high for knowledge creation - shared understanding and trust are achieved more effortlessly in a relaxed atmosphere. Thus, it should be studied what impact virtual settings have on informal meetings. Significantly, budgets and other accounting-related tasks appear to oblige casual meetings. Those include a great deal of ambiguity, and face-to-face meetings appear to bring stakeholders closer to each other opinions and find compromises (Johansson et al., 2003; Maitlis, 2005; Busco et al., 2006; Goretzki et al., 2016).

Nevertheless, academics have provided some previous theories on whether virtual settings and information technology (IT) can cherish local knowledge distribution in organizations (Falconer, 2006; Panahi et al., 2013; Faraj et al., 2011). Previous conclusions are mostly contradictory when considering solely tacit knowledge sharing, and no consensus has been found yet (Panahi et al., 2013). The first school claims that tacit knowledge sharing is too difficult through IT since knowledge is locating in employees' minds and cannot be shared since that information is only available through field experiences. On the other hand, the second school argues that tacit knowledge can be shared through IT to some point, but it does not transfer as rich as it transfers through face-to-face meetings. This school highlights the importance of vast and real-time communication possibilities that IT solutions contain. The lack of consensus in the field of virtual knowledge distribution research requires further examination.

The possible positive and negative aspects of virtual information distribution require further research due to the problems revealed during the COVID-19 pandemic in spring 2020. As a case in point, usage of Microsoft Teams increased in Finland and Europe when the pandemic emerged, and many users faced problems with their platform connections (Kauppalehti, 16th March 2020). Thus, this profound and sudden change in virtual communication could have affected organizations' information distribution. Also, there might be some other hidden aspects that virtual settings have brought along to information distribution. For example, five CEOs from large-cap organizations listed in Nasdaq OMX Helsinki wrote in Kauppalehti that lack of genuine presence and communication in workplaces leaves employees alone with their challenges - consequently, decreasing the willingness of innovating (23rd June 2020, Kauppalehti). Their notion implies that virtual settings could have decreased information distribution between controllers and business units when creating forecasts.

Despite the lack of consensus in virtual knowledge distribution, previous research has provided a local knowledge distribution model in virtual settings. However, there seems to be no evidence on how this model applies in planning discussions in virtual settings. Panahi et al. (2013) summarize from previous research the mechanisms and technologies for knowledge sharing and creating in virtual settings that follow Nonaka et al.'s (1995) classic knowledge creation model in organizations. The model's virtual knowledge-sharing mediums are relevant to examine further since planning discussions reveal local knowledge only through extensive

discussions. It remains hidden whether virtual mediums support formal and informal planning discussions to an equal extent as face-to-face conversations.

1.2 RESEARCH OBJECTIVES, BOUNDARIES, AND CONTRIBUTIONS

"Any fool can know. The point is to understand" -Albert Einstein.

The thesis' objective is to shed light on a management accountant's learning process during budgeting practices in a virtual context. The thesis attempts to conclude how local knowledge has flown through information technology from operational levels to a controller and forward-looking forecasts when a physical interaction remains non-existent. Rich information from the field has been distributed to budgets before COVID-19 via a mix of physical and virtual planning talk, and no conclusions appear to exist on whether planning talk can occur in virtual settings. Thus, the thesis aims to provide insights into whether virtual conditions can currently support planning talk between a controller and a business unit employee. Humankind will probably not face a similar pandemic soon, but the world and organizations are continually becoming global. For instance, CNN informed the 12th of May 2020 that "Twitter will let some employees work from home forever." Consequently, the thesis conclusions could help organizations to operate better in virtual settings.

Planning is the most critical feature of management control systems (MCS) when an organization attempts to operate in rapidly changing markets (Kloot, 1997; Henttu-Aho, 2018). Successfully executed planning offers organization insights in the middle of multiple disrupting forces (Becker et al., 2016; Goretzki et al., 2016; Palermo, 2018). More modern budgeting processes are viewed closely in the thesis due to executing budgets' planning ability better than traditional budgets (Hansen et al., 2003). Novel budgeting methods are based on objective discussions and aim to leave budgeting games out of the planning process. Consequently, budgeting planning ability benefits are undoubtedly eminent compared to other MCS when navigating in the middle of the ambiguous world (Kloot, 1997; Henttu-Aho, 2018). Thus, the thesis is limited only to budgeting when an organization seeks to gain an extensive overview of its operations and markets.

Huber (1991) defines four steps in the organizational learning process: information acquisition, information distribution, information interpretation, and organizational memory. Albeit all

these steps are undoubtedly vital for organizational learning, the thesis concentrates mostly on information distribution. It takes the perspective of a remotely working controller seeking local knowledge for budgets that flow from business units. The successfully executed information flow from operational levels to budgets should ensure that an organization will fit well with its environment at different times (Kloot, 1997; Henttu-Aho, 2018). Without Information distribution, an organization would not benefit from the acquired information (Huber, 1991; Lubit, 2001).

Local knowledge's definition follows previous organizational and management accounting research (Polanyi, 1966; Nonaka, 1994; Lubit, 2001; Vaivio, 2004). Like in previous research, the thesis considers local knowledge mainly as tacit market and operational information of business units, but it recognizes that it may have explicit dimensions (Panahi et al., 2013). Local knowledge arises from business units' daily experiences, and all insights are considered relevant sources of information for budgets. Strictly in a remote working management accounting professional is solely a processor of information, and communication with business units brings the knowledge to their budgets. Significantly, more novel controllers need to rely on business units' views since they do not have that long experience in the industry.

The unpredictable nature of continually emerging disruptive forces, like globalization or specific details from local markets, requires constant information distribution from a business unit. Eventually, efficient information flow should secure an organization's output competitiveness (Argote et al., 2011). However, knowledge sharing is not effortless in physical circumstances due to information's sticky nature and knowledge holders' reluctant attitude towards sharing information, and it can get even trickier in virtual settings (Brown et al., 2001; Vaivio, 2004; Faraj et al., 2011; Panahi et al., 2013). The thesis relies on previous literature about knowledge distribution in virtual settings to seek theoretical ground for information distribution when operating remotely. The knowledge distribution matrix by Panahi et al. (2013) is used as a theoretical framework for determining how operations' local knowledge can be turned into explicit solely in virtual settings. Specifically, Panahi's matrix creates initial conditions for formal and informal planning talk.

The thesis contributes to previous organizational learning literature by discussing whether local knowledge can be shared through information technology and whether it has any restrictions in remote conditions (Falconer, 2006; Panahi et al., 2013; Faraj et al., 2011). Specifically, it provides insights for the management accounting literature about virtual planning talk during

budgeting processes by conducting a case study from three global manufacturing organizations. As noted, the study results could be harnessed, especially in multinational organizations that need to rely on virtual collaboration tools daily to a considerable degree. The thesis also provides insights to organizations in various industries by investigating the extent to which local knowledge is possible to distribute from operations to budgets in virtual settings. Virtual settings' pitfalls and benefits to formal and informal budgeting discussions are detected and analyzed. However, this thesis delimits budget variances out of the examination due to the unstable business environment during COVID-19. Thus, the conclusions provide only preliminary insights into the virtual setting's possible advantages and disadvantages to planning talk.

The research question of the thesis could be formulated as follows:

> *How virtual settings affect planning talk - and do the possible changes affect a controller's business understanding behind budgets?*

The research question is examined with an exploratory case study. It consists of interviews with eleven management accounting professionals that work in Finnish globally operating manufacturing organizations. The study's results indicate that when moving away from hybrid interaction to virtual collaboration, business understanding behind budgets could impair with current digital processes. Local knowledge flows steadily to forecasts in formal virtual budgeting meetings with minor limitations, but lack of the stakeholders' physical presence can downscale more profound perceptions of possible upsides and downsides behind forecasts. Virtual settings especially seem not to support sudden informal meetings and development projects between business units and a controlling function.

1.3 STRUCTURE OF THE THESIS

The thesis consists of six main chapters from which the introduction serves as a first. After that follows a literature review intended to provide a theoretical overview of prior research behind the thesis' subject and research question. First, it summarizes the important role of budgeting processes' planning ability in contemporary organizations. Second, it provides an overview of why local knowledge is a seminal matter for organizations. Third, it clarifies the important role of organizational learning and especially information distribution in organizations. Last, the

literature review introduces the limited amount of previous literature in virtual local knowledge distribution. The literature review can be formulated in the following argument:

> *The change to virtual budgeting settings could impact planning talk's depth, possibly leading to a decreased business environment understanding in organizations.*

Research settings and methodology for the thesis are presented in the third chapter. The research question is examined with an exploratory case study that suits emerging management accounting topics. In the case study, there are conducted eleven semi-structured interviews from three large-cap Nasdaq OMX Helsinki organizations. The interviews are limited to CFOs from two organizations, their business controlling teams, and one organization's business controller. After introducing the methodology, follows the case study. It relies on the literature review's argument and investigates how fully virtual settings caused by COVID-19 have impacted planning talk. Clear-cut and comprehensive results are provided in this section. In the fifth chapter, the case study's emerging insights are discussed with the previous research considering information distribution in virtual settings. The differences and similarities of virtual local knowledge distribution between prior literature and case study are detected and analyzed. Lastly, in the sixth chapter, the thesis' main findings are concluded, its limitations are discussed, and further research ideas are provided.

2 DISTRIBUTION OF LOCAL KNOWLEDGE TO BUDGETS: AN OVERVIEW

Rolling forecasts and other budgeting methods are planning tools that are central when organizations attempt to mobilize local knowledge from their field operations and understand their internal and external business environments better in a disruptive and globalized world. The next chapter will introduce local knowledge's relevancy to organizations comprehensively and illustrate why and how budgets can distribute influential information from operational levels. The knowledge creation in physical and virtual settings is also summarized in the chapter based on the previous research. Figure 1 provides an overview of the knowledge creation process in an organization:

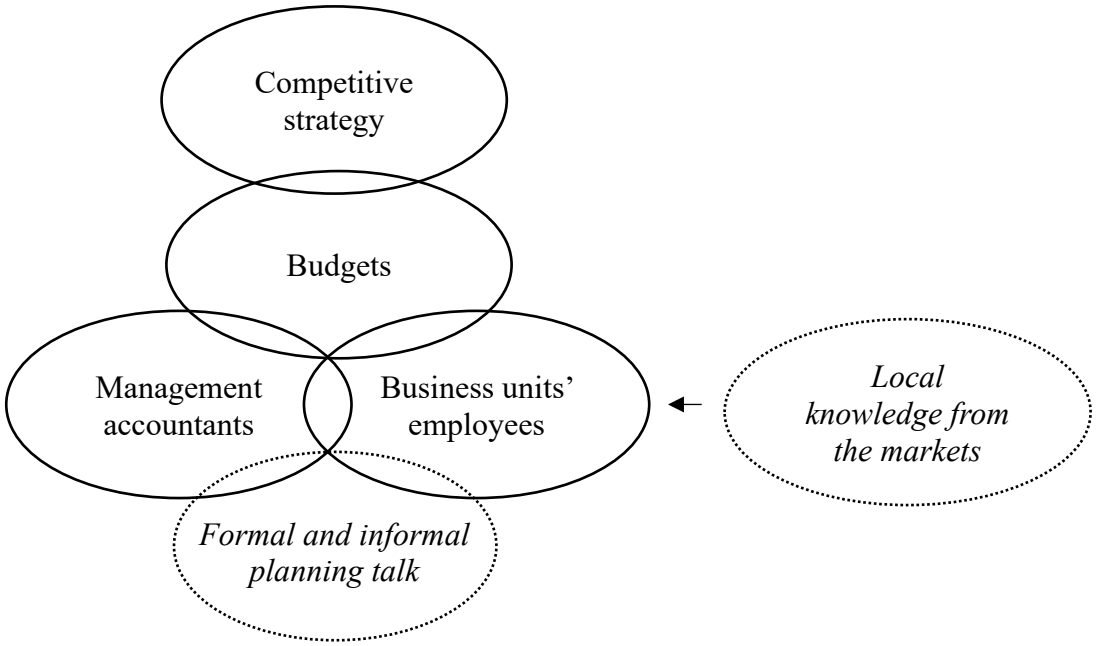

Figure 1 Knowledge creation in organizations with budgeting

2.1 SUPERIOR PLANNING ABILITY OF BUDGETING

Budgeting traditionally has three primary purposes: planning, control, and evaluation (Henttu-Aho et al., 2013). Malmi et al. (2008) clarify budgets' nature and describe that budgets are "cybernetic controls," feedback loops of organizations' strategies. The definition means that budgets are financial illustrations of a strategy and used for evaluating the actual performance of internal stakeholders, departments, and individual employees. Budgets should reveal a

difference between an expected result and an outcome that can be harnessed for organizations' evaluative purposes. A management accounting professional seeks to find root causes and explanations for variances, eventually communicating to executives possible reasons. With these valuable insights from a controller, upper management can take corrective actions in organizations if needed.

Especially, supporting planning in organizations has been considered as one of a manager's most important tasks. Forecasts give feedback on the chosen strategy in the middle of today's continually emerging contingencies (Becker et al., 2016; Gorezski et al., 2016; Palermo, 2018). Consequently, they enable an organization to take corrective actions to fit in its competitive environment (Kloot, 1997; Henttu-Aho, 2018). Recent empirical studies have found that modern budgeting practices such as rolling forecasting, use of different balanced scorecard systems, beyond budgeting (BB) and activity-based budgeting (ABB) are used vastly for planning in organizations (Østergren et al., 2011 and Bourmistrov et al., 2013; Henttu-Aho et al., 2013; Henttu-Aho, 2018).

In contrast, traditional budgeting methods appear not to suit equally well for planning. "Traditional budgeting is fundamentally mismatched to today's rapidly changing and uncertain environment" (Hansen et al., 2003). Those methods concentrate on history, emphasize centralized decision making and decrease motivation due to lack of employee participation (Wallander, 1999; Neely et al., 2001; Hope et al., 2003; Hansen et al., 2003, Henttu-Aho et al., 2013; Henttu-Aho, 2016; Henttu-Aho, 2018). Annual budgeting methods seem not to render a stable ground for planning talk. Therefore, modern budgeting mediums are henceforth referred to as budgeting.

Organizations particularly rely on rolling forecasts when they use budgeting methods for planning purposes, and only a handful of them have gone radically beyond budgeting. For instance, Henttu-Aho et al. (2013) found that all five organizations in their case study relied on rolling forecasts when they needed to forecast changes in their business environments. The rolling forecasts' benefits include continuous planning throughout the year, less explicit content, easier updating, focus on the future, and timely planning (Hansen, 2010). Usually, a rolling forecast's role is to look 12 to 18 months forward, and its nature is cumulative (Henttu-Aho et al., 2013). The idea is to adjust a rolling forecast every month or quarterly based on insights from the field. The rolling forecast aims to maximize market visibility and predict the possible upsides and downsides (Becker et al., 2016; Goretzki et al., 2016; Palermo, 2018;

Henttu-Aho, 2018). A rolling forecast emphasizes business processes and activities rather than cost centers' responsibilities (Østergren and Stensaker, 2011; Goretzki, 2013).

Budgeting planning ability aims to illustrate an organization's reality-based situation in the future. Planning talk, a discussion between business units and controllers, is essential when transforming budgets to represent reality (Henttu-Aho et al., 2013; Henttu-Aho, 2018). Suitable conditions for planning talk lead to a better "feedback loop" or "stretch" zone where a management accounting professional is obligated to learn new things when conditions around an organization change (Malmi, 2001; Kahn,1990). These discussions should lead to better organizational decisions and increase organizations' competitiveness in the long-term (Vaivio, 2004; Bourmistrov et al., 2013).[1]

However, many forecasts could be biased due to operational managers' extensive involvement in setting a strategy that may not be fully based on hard facts (Østergren and Stensaker, 2011). A manager's frames may quickly override a management accountant's opinions if no suitable platform for planning discussions exists (Kaplan, 2008). Alternatively, it could also be only the lack of informal and formal meetings in organizations that lead to diminished knowledge sharing (Nonaka, 1994; Nonaka et al., 1995; Barmeyer et al., 2019). A suitable ground for planning talk is required.

Intensive use of a management control system (MCS), like budgeting, provides an agenda and forum for regular organization-wide dialogue and frequent opportunities for face-to-face debates at various organizational levels (Busco et al., 2006; Henri, 2006). Direct horizontal communication between units within an organization helps address complex operational realities and decreases information manipulation (Chapman, 1998). Budgeting processes should also include continuous opportunities for informal discussions (Nonaka, 1994; Nonaka et al., 1995; Barmeyer et al., 2019). To summarize, forecasts provide enhanced business environment understanding for a controller through extensive discussion with business units and ensure that an organization will fit well with its business environment (Kloot, 1997; Østergren et al., 2011; Henttu-Aho et al., 2013; Henttu-Aho, 2016; Henttu-Aho, 2018).

[1] Changes in business environments and digitization have enabled a controller to take a more strategic role. Consequently, in management accounting research, controllers are now perceived more often as "business partners" rather than bean counters (for instance, Järvenpää, 2001; Vaivio et al., 2006). The new status enables management accountants to challenge business units during budgeting meetings even better since they are perceived as equal conversation partners.

2.2 LOCAL KNOWLEDGE IN BUDGETING

Local knowledge of specific market conditions, like customers and operations, arises from employees working in the "field" (Nonaka, 1994; Nonaka et al., 1995; Lubit, 2001; Vaivio, 2004). Polanyi (1966) introduced the term local knowledge first in organizational research and defined that operations have gained insights "by doing things." Polanyi mainly means routines, experiences, and problems that are continuously solved and have brought unique skills to individuals in an organization. Management accounting research considers local knowledge as a substantial part of the planning process. Depth information from the field transforms forecasts into more reality-based, consequently increasing budgets' planning ability (Vaivio, 2004; Østergren et al., 2011; Bourmistrov et al., 2013; Henttu-Aho et al., 2013; Henttu-Aho, 2016; Henttu-Aho, 2018).

Disruptive markets make information requirements of budgets constantly more demanding. Local knowledge helps a management accountant understand swiftly changing market conditions better. The deepest tacit level of local knowledge, "Knowing-how," forms the competitive advantage in a contemporary organization (Vaivio, 2004). Access to resources and markets does not play a crucial role anymore due to the world's digitized nature. Thus, knowledge and intellectual capital have become the primary competencies and keys to superior competitive advantage (Lubit, 2001). Knowing the market and operational conditions better than competitors builds core competence, and it is a source of sustainable competitive advantage in modern organizations (Vaivio, 2004).

Especially, multinational companies (MNCs) need local knowledge continuously. External environment's advancements occur quickly in MNCs, and they must keep their competitors' pace, otherwise losing possibly their competitive advantage. MNCs have massive resources to invest in research and development (R&D). Thus, a professional assigned to these departments can spend enormous time re-engineering competitors' goods or benchmarking on the best practice companies' solutions (Lubit, 2001). With local knowledge's help, forecasts aid organizations in detecting the swift changes in the markets and acting in necessary ways. However, organizations' knowledge management capabilities must be developed so that innovations could spread inside an organization to the value-adding forecasts (Lubit, 2001).

Local knowledge has an explicit and tacit dimension. The tacit information is incredibly fundamental for an organization since it is difficult to copy by its competitors due to its "sticky"

nature (Nonaka, 1994; Nonaka et al., 1995; Brown et al., 2001; Vaivio, 2004). By sticky, it is meant that knowledge can be gained almost only through field experiences or extensive discussions with different stakeholders (Bourmistrov et al., 2013). Figure 2 illustrates two dimensions that local knowledge preserves:

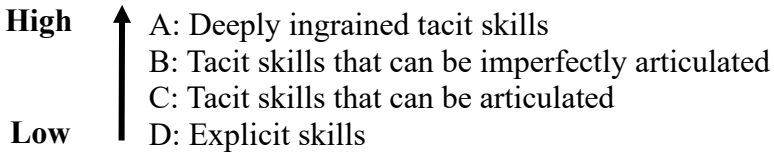

Figure 2 Degree of "tacitness" (Panahi et al., 2013)

In Figure 1, point (d) refers to a pure explicit knowledge that can be understood as "knowing that." Point (a), on the contrary, refers to deeply ingrained skills, which can be considered to mean "knowing how" (Lubit, 2001). Individuals can gain pure explicit knowledge without constant discussions or observations, and it is transmittable via systematic language since the context of the message is easy to grasp (Polanyi, 1966, Nonaka et al., 1995). For instance, when considering management accountants during budgeting processes, it is relatively effortless for them to take forecasted inflation levels to their cash management forecasts from explicit sources. External knowledge can be captured effortlessly without extensive discussions with operations (Nonaka et al., 1995).

The main difference between pure explicit and tacit information lies in tacit knowledge's technical and cognitive dimensions. Figure 3 illustrates how pure tacit knowledge is deeply ingrained in an individual's mind and is sometimes too complex to share verbally (Nonaka, 1994). However, defining a degree of tacitness is not a simple task. Panahi et al. (2013) note that "tacitness" should not be expressed as a pure 0 or pure 1 in terms of the binary system since most knowledge includes tacit and explicit dimensions. Thus, points (b) and (c) in figure 2 demonstrate a normal situation in organizations. For instance, during budgeting processes, a controller can receive market inputs to calculations but cannot be entirely sure how a specific business unit has ended-up with certain results. Operational units might have an intuition that the markets will be more lucrative in the next quarter but cannot communicate that insight more specifically. However, this hunch could impact forecasts and enable the organization to create

plans in case of potential upside. Thus, local knowledge flow is fundamental for organizations – and they should secure the practices that offer the best conditions for distributing it.

Technical Dimension
Hands-on experience, Rules of thumb, Best practices, Skills
Cognitive Dimension
Understanding, Mental models, Insights, Intuition, Routines

Figure 3 Examples of technical and cognitive dimensions of tacit knowledge, adopted from (Nonaka, 1994, Panahi et al., 2013)

Tacit knowledge is based on individuals' perceptions of reality (Choo, 1998). Individuals have absorbed knowledge from the field through their experiments, discussions, and observations. Specific knowledge is burdensome to share, formalize or express since people have learned technical or cognitive skills from various events in the "field" (Nonaka, 1994; Lubit, 2001; Vaivio, 2004). Lubit (2001) concludes that the difficulty of sharing tacit information lies in an individual's skills, mental models, ways of approaching problems, and specific organizational routines. He demonstrates with an empirical notion the problematic nature of tacit information: "Studies using computer-simulated factories have shown that people can learn to control complex systems, although they remain unable to answer questions about the system they learned to control."

Also, individual employees do not always grasp the value of their knowledge to an organization. As Vaivio (2004) describes the phenomenon: "The lorry driver in the delivery function never considers the logistic value that his understanding of the loading procedures contains." The tacit knowledge is sometimes too deeply rooted inside employees and remains impossible for them to communicate (Polanyi, 1966). Nonetheless, the best practice organizations should enable constant information flow until the point where it is possible - tacit knowledge increases market visibility and hence generates competitive advantage in a modern organization (Kloot 1997; Bourmistrov et al., 2013; Henttu-Aho et al., 2013; Henttu-Aho, 2018).

2.3 LOCAL KNOWLEDGE DISTRIBUTION TO BUDGETS IN PHYSICAL SETTINGS

A management accountant is in a fundamental position when organizations seek local knowledge from the field. They can connect and analyze de-centralized views of operations (Vaivio, 2004). Management accountants mobilize local knowledge from discussions with business units to budgets. The insights are turned into numerical forms and provoke innovative strategies to answer exogenous changes in organizations' environments (Kloot, 1997; Henttu-Aho, 2018). Extensive debates and negotiations between a management accounting function and operations should be promoted to maximize budgeting processes' information distribution, i.e., planning talk (Goretzki et al., 2016).

Employees in operations have different interpretations of how to tackle challenges with today's disruptive world when insecurities arise (Weick, 1995). The consensus is that shared understanding should be achieved through various departments' face-to-face meetings where "sensemaking" occurs (Maitlis, 2005). Sensemaking is especially required in a global organization that operates in a highly dynamic environment since information becomes outdated quickly (Goretzki et al., 2016). Especially, budgets need constant updates, and without frequent sensemaking, they may lose their forward-looking nature. Frequent planning talk between different stakeholders helps a controller expand the understanding of an organization's uncertain future (Gorezski et al., 2016). Consequently, it enables organizations to reach a more realistic consensus of the market and operational factors (Henttu-Aho et al., 2013).

Goretzki et al. (2016) illustrate empirically how the encounters between different operations increase collective decision-making when conducting forecasts. They conclude that the meetings' socializing nature helps define everyone's accountabilities better, increasing the collective trust towards budgeted numbers. Also, they refine the nature of socialization further: it is the mix of formal and informal discussions that build shared understanding in de-centralized teams. Discussions help employees consider different perspectives and are therefore very useful mediums to transfer knowledge from one to another. The same socialization effect has been noticed as well in other empirical studies. For instance, Vaivio (2004) illustrates in his case study how the provocative non-financial KPIs sparked debates that helped management accounting function to understand the markets and operations at a deeper level.

Significantly, accounting-related procedures could erode decision-making if not addressed accurately in an organization (Busco et al., 2006; Goretzki et al., 2016). Results in financial statements or forecasts can increase existing ambiguity if the origin of numbers remains unclear. No one in operations wants to take responsibility for results if the figures' root source is not perceived comprehensively (Busco et al., 2006). Thus, physical planning meetings serve a decisive purpose in accounting-related issues. A management control function often relies quickly on hard data, albeit a substantial part of organizational learning is experimental (Vaivio, 2004). Thus, local knowledge is more comfortably mobilized through meetings and observing (Nonaka, 1994; Lubit, 2001; Vaivio, 2004; Goretzki et al., 2016). The lack of discussion and overly great emphasis on numerical results could impair information in budgets. Planning remains too shallow if the importance of verbal knowledge sharing is not recognized in an organization.

Knowledge-sharing capabilities should be developed in a manner that innovations could spread. "Knowledge that cannot be spread within a firm remains the property of a few people rather than of an organization" (Lubit, 2001). In budgets, it would mean that their accuracy would decrease without proper knowledge management capabilities - possible upside or downside would remain hidden. Like every other employee in an organization that needs to understand certain operations' tacit dimensions, management accounting professionals need constant feedback from the field. As Lubit (2001) puts it: "Individuals may never conceive of some of the best solutions without the assistance of experts." Importance of knowledge management capabilities increases in an organization operating under a high uncertainty level (Chapman, 1998). Involved culture in budgeting should be stressed to a great extent in an organization such as a multinational organization.

2.3.1 Budgeting in organizational learning

Physical planning meetings are central when distributing local knowledge among organizations' employees. To learn, an organization should have variable goals and forecasts that reflect their previous actions and current perceptions of the future (Cyert et al., 1963). Learning organizations should also adapt decision-making practices to suit current circumstances and modify organizational goals to make them more realistic to achieve (Cyert et al., 1963). Baumard et al. (2005) add that a learning organization should also inquire how previous prosperities have been reached. An organization needs to improve its actions overtime

to survive and keep its competitive advantage. The specific need is especially highlighted in the modern world where an organization needs to fit itself in a continually changing environment (Becker et al., 2016; Gorezski et al., 2016; Palermo, 2018).

Budgeting tools help with organizational learning's primary goal, the survival of an organization. Kloot (1997) explains that budgets concentrate on the future rather than the past, supporting Argyris' (1977) vastly recognized goals of organizational learning (for instance Huber, 1991; Argote et al., 2011). Argyris defines organizational learning's primary goal as follows: organizations that can react to external and internal environment changes timely and detect the possible challenges these alterations bring are learning organizations. The distinguished term for organizational learning's primary goal is "single-loop learning." He fines down the term: organizations can maintain their central features and carry their existing policies by responding to internal and external changes. Argyris (1977) also formulates the second goal of organizational learning that should bring a competitive advantage in the long-term. This goal is referred to as "double-loop learning" - when learning in organizations concentrates not only on detecting errors but also on questioning underlying policies, more sustainable learning is achieved. Hence, the role of forward-looking, feedback giving, and discussion triggering budgeting should be stressed in an organization.

Consequently, budgeting methods are highly necessary for organizational learning. Budgeting concentrates on the future and provides vital feedback on the chosen strategy, nudging employees to innovate. In organizational learning, the primary task of budgets is to inform whether alterations occur in an organization's internal or external environment and require actions or modifications to pre-planning (Kloot, 1997; Henttu-Aho, 2018). Generative learning occurs when budgets notice something in the environment that affects an organization's results. These well-established cybernetic controls lead to a better "feedback loop" or "stretch" zone where a decision-maker is obligated to learn new things when conditions around an organization change (Malmi, 2001; Kahn, 1990). Budgets' cybernetic nature provides a suitable platform for "double-loop" learning and brings sustainable competitive advantage in the long-term (Kloot, 1997; Henttu-Aho, 2018).

Huber (1991) divides organizational learning into four main steps:

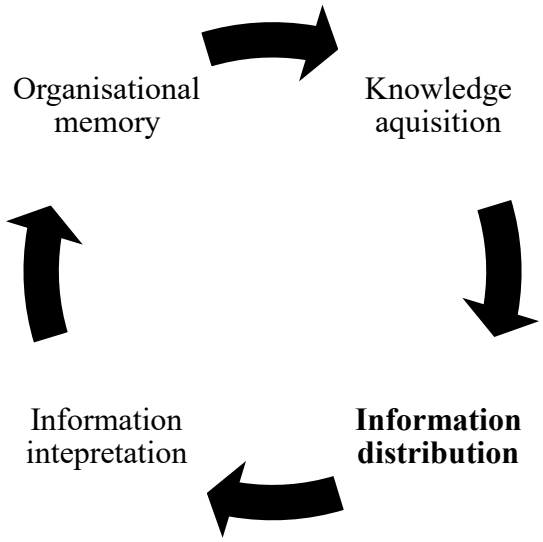

Figure 4 Organizational learning (Huber, 1991)

First, Huber (1991) defines *knowledge acquisition*. It stands for various information collection processes that operational units have before distributing information further. His study concludes that based on the previous research, knowledge can be acquired in five different ways: by congenital-, experiential-, vicarious-, grafting- and searching & noticing. Congenital learning represents the roots of information lying in the founders' intellectual capital. Particular knowledge acquisition branch considers that founders' knowledge has provided mission and vision for an organization, guiding knowledge acquisition further. In the second information acquisition mode, experiential learning, organizations learn from their field experiences (Nonaka, 1994; Vaivio; 2004). The information collection process can be carefully thought or unintentional. The third mode of knowledge acquisition, vicarious learning, could be described as benchmarking from competitors. The idea in particular information acquisition method is to duplicate the best-practice strategies and tactics from rival organizations. Fourth mode grafting represents new hires of an organization who bring their knowledge to an organization's use. The final mode of information acquisition is searching and noticing. Searching means focused investigations on an organization's internal and external environment, whereas noticing means that employees crush into some information by accident.

The second step, *information distribution*, serves as a link between information acquirers, users, and organizational strategy. It can be referred to as planning talk between business units and controllers in budgeting (Goretzki et al., 2016; Henttu-Aho et al., 2018). It is the most fundamental component in organizational learning and needs to be an organized and frequent process. Non-existent information distribution would be an enormous risk for organizations: missing communication among stakeholders would leave the local knowledge to operational levels and would bring no value to an organization itself (Huber, 1991; Nonaka, 1994; Nonaka et al., 1995; Kloot, 1997; Vaivio, 2004; Henttu-Aho, 2018; Barmeyer, 2019). In the case of controllers and budgets, the lack of information distribution would mean the absence of decisive planning talk with business units. Also, the ignorance of the value of one's own knowledge to an organization calls for organized structures and frequent discussions in place for information distribution (Polanyi, 1966; Vaivio, 2004; Barmeyer, 2019). Thus, the organized formal and informal information distribution processes are comprehensively viewed in section 2.3.2. of the thesis.

The third step in organizational learning is *information interpretation*. The term stands for individual understandings of information, usually based on their previous experiences and frames (Kaplan, 2008). Physical meetings have been considered a great medium to reduce biased interpretations and create shared understanding (Busco et al., 2006; Goretzki et al., 2016; Barmeyer, 2019). Eventually, information is only a flow of messages, while knowledge is created truly after interpretations (Nonaka, 1994). The last of the steps in organizational learning is *organizational memory*. It serves as a location where experiences are stored for further usage, i.e., computers or humans. Knowledge preservation is expected from a learning company since it should accumulate data from previous successes and use it when needed (Cyert et al., 1963; Kloot, 1997).

To summarize, organizational learning is the process of changing an organization to match its environment (Kloot, 1997). The formal and informal budgeting discussions provide a sufficient podium for revealing and distributing local knowledge (Henttu-Aho et al., 2013; Henttu-Aho, 2016; Østergren et al., 2011; Bourmistrov et al., 2013; Barmeyer, 2019). Efficient organizational learning requires information distribution mediums through which employees can share their knowledge, beliefs, and assumptions with other employees (Marquardt and Reynolds, 1994). By doing this, an organization enables learning for its employees, i.e., acquiring new skills, attitudes, and ways of solving problems (Hames, 1994). Organizations

should concentrate on suitable learning conditions since premier organizations facilitate the learning process (Kloot, 1997).

2.3.2 Information distribution in budgeting

Knowledge distribution is the most decisive dimension of organizational learning since it is in a central position if an organization wants to benefit from its learning (Huber, 1991; Kloot, 1997; Lubit, 2001). Efficient information flow creates new knowledge when other employees process information (Nonaka, 1994). Shared local knowledge can be tacit or explicit by its nature. However, the possible tacit dimension of all knowledge and individuals' ignorance of their own skills' relevance to an organization stresses the importance of securing all local knowledge sharing among employees.

Modern phenomena, quick rotation of workforce, distributed work arrangements in a global organization, and emerging mergers & acquisitions increase the need for successful information distribution (Argote et al., 2011). Individual employees hold local knowledge, and with ineffective information distribution mechanisms, information remains at their end (Lubit, 2001). Individuals are knowledge "receptors" of an organization (Argote et al., 2011) or knowledge "acquirers" in terms of the organizational learning process (Huber, 1991). Thus, employees can also be considered scattered organizational memories that an organization cannot use once they leave their positions. However, successful information distribution processes can decrease certain risks and ensure that knowledge could continuously flow in an organization. It moves knowledge of the best practices from a few individuals to an organization (Lubit, 2001).

Local knowledge is encapsulated in organizations' tangible and intangible goods in the end (Argote et al., 2011). Hence, with adequate information distribution, the quality of products is maximized. End products represent the final form of local knowledge that brings a competitive advantage to an organization. On the other hand, the lack of proper information distribution makes products and services uncompetitive: competitiveness of goods suffers due to lack of value-adding individual opinions. One reason for limited opinions could lie in a vigorous hierarchy. As Kaplan (2008) concludes, managerial frames may affect a biased way in decisions. An extreme example of Kaplan's harmful frames is Nokia's fall. The Chairman of the Board's biased decisions and unwillingness to use the information from the operations

played a significant part when Nokia was forced to abandon their once eminent, globally leading mobile phone business to Microsoft with a valuation that was a fraction of Nokia's golden era market capitalization (Siilasmaa, 2018). Thus, formal information distribution processes, like planning talk, are required to secure knowledge flow.

However, recent research indicates that formalized processes are not the only important aspect of information distribution. Tacit knowledge especially seems to be distributed more fluently in informal meetings that occur spontaneously (Oddou et al., 2009). Barmeyer et al. (2019) strengthen this view empirically. They conducted a case study in three Italy-based organizations and investigated the importance of 'coffee breaks' when sharing tacit information. They approached the matter since there was no empirical evidence in the research that "formalized forms of informal information management are actually practiced in organizations" (Barmeyer et al., 2019). They conclude that suitable interpersonal moments arise during hectic daily work-routines in an organization's coffee break rooms and hallways. These meetings can also provide a forum for continuous opportunities for decisive planning talk (Kloot, 1997; Henttu-Aho et al., 2013; Henttu-Aho, 2018).

Successful information distribution depends on individuals and their efforts to share information. Meetings and informal networks between employees lead to contacts that indirectly support information circulation in organizations (Barmeyer et al., 2019). Soda et al. (2012) fine down that: "in organizations information is frequently amended by informal elements, such as questions and answers, but also ideas and suggestions." Coffee break rooms or sudden meetings in hallways provide an informal forum where people from different hierarchical levels meet and discuss various topics. The same division's employees rarely go to a coffee machine jointly, making shared information enrich (Barmeyer et al., 2019). Formal meetings also include informal knowledge sharing, but coffee breaks add sudden chances to communicate with various people where discussion time is not strictly limited (Barmeyer et al., 2019).

Figure 5 summarizes the positive effects of informal information distribution: *place and surroundings, influence of room change, influence on social interaction*, and *types of knowledge.* Casual meetings enhance a controllers' business understanding. Sudden questions make them ponder different aspects of business, and the relaxed atmosphere makes them more comfortable to solve problems with each other due to the increased trust (Busco et al., 2006).

To summarize, it can be more uncomplicated for controllers to perceive a complete business overview behind budgets in a casual atmosphere.

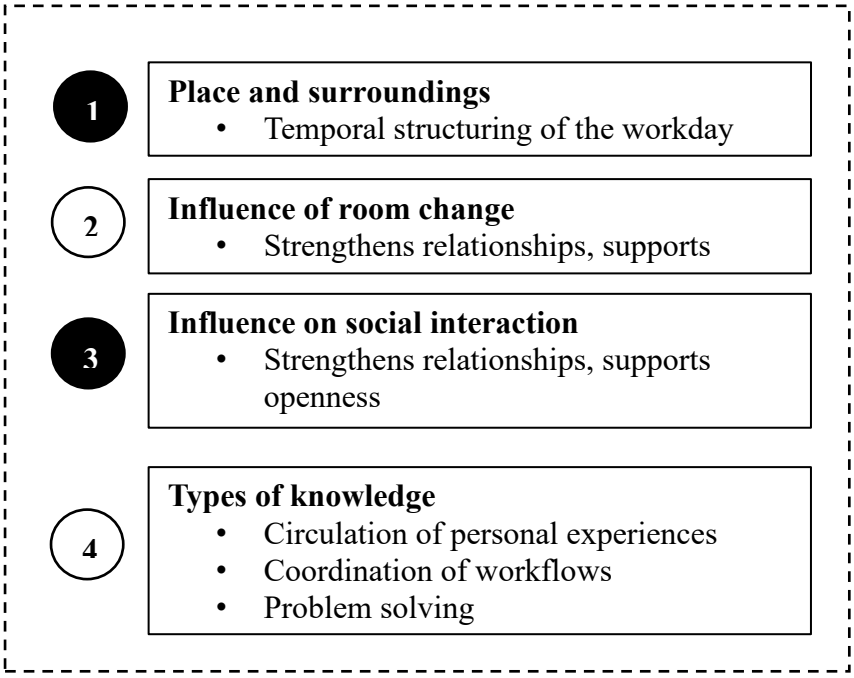

Figure 5 "Coffee breakroom's" positive effects on information distribution, adopted from (Barmeyer et al., 2019)

It could be more effortless to perceive what matters for a business in informal meetings. Nonaka (1994) divides local knowledge into tacit and explicit dimensions and explains that information has semantic and syntactic levels. Semantic means genuinely vital information for an organization, like the rise of new technologies or knowledge of suppliers that guarantee the best price to quality ratio. Syntactic, on the other hand, stands for information that flows into an organization continuously but does not bring a competitive advantage. The distribution of semantic knowledge is especially crucial for an organization since it is the core source for competitive advantage. For instance, in budgets, semantic knowledge helps an organization plan its operations according to the most seminal internal and external trends. Semantic knowledge enables controllers and budgets to focus on the most vital factors in the markets (Henttu-Aho et al., 2013).

However, it remains challenging to determine which information is semantic and syntactic. For instance, when considering the importance of knowing how many e-mails have been received in a certain organization in one month, it must be comprehensively thought whether certain

knowledge matters or not. The number of e-mails might be a proxy of a higher backlog, but on the other hand, it can be only traffic that does not particularly mean anything. As noted, formal and informal face-to-face meetings have been considered to categorize "what is important" due to the meetings' socializing nature (Vaivio, 2004; Busco et al., 2006; Henttu-Aho et al., 2013; Barmeyer, 2019). The importance of verbal interaction increases when an agenda discusses information that goes into financial forecasts (Goretzki et al., 2016). Face-to-face meetings are the primary form of information distribution if there is no chance for direct "observation" (Nonaka, 1994).

Figure 6 presents the local knowledge distribution mediums in physical settings:

Face-to-face	
Socialization *(tacit to tacit)*	**Externlization** *(tacit to explicit)*
-Team meetings *-Discussions* *-Interpersonal interactions* *-Apprenticeship* *-Participation* *-Observation*	*-Dialog with team* *-Answering questions* *-Storytelling* *-Metaphors/analogies*
Combination *(explicit to explicit)*	**Internalization** *(explicit to tacit)*
-Books *-Papers* *-Reports* *-Presentations* *-Indexes, etc.*	*-Learning by doing* *-Learning from books, reports, presentations, lectures, etc.*

Figure 6 Local knowledge distribution mediums, adopted from (Nonaka, 1994; Panahi et al., 2013)

Psychological safety, lacking defensive routines and trust, facilitates learning (Argote et al., 2011; Barmeyer et al., 2019). Especially, MCS used as information distribution mediums are ineffective without trust (Busco et al., 2006). MCS are considered as suitable tools for "engender feelings of trust" and "identifying possible solutions in critical situations" (Kloot, 1997; Johansson et al., 2003). Nonetheless, there should exist "trust for accounting systems," making an organization lean on MCS when a crisis should emerge (Busco et al., 2006). Busco

et al. divide the trust into "personal trust" and "system trust." The former represents trust in management accounting professionals and the latter trust in MCS themselves. Business units need to trust management accountants before they can count on MCS. Personal trust has been achieved traditionally through face-to-face meetings by explaining operational matters in the financial language (Dent, 1991; Kloot, 1997; Busco et al., 2006; Henttu-Aho, 2018).

Consequently, management accounting processes require safe conditions to build shared understanding and reveal local knowledge (Henttu-Aho et al., 2013; Goretzki et al., 2016; Busco et al., 2006). In addition to meeting business units, frequent backstage interactions with their colleagues seem to affect their feeling of psychological safety (Goretzki et al., 2019). Once an organization has achieved a feeling of trust, it can distribute information in multiple ways. Information can be shared from tacit to tacit information (Socialization), tacit to explicit information (Externalization), explicit to explicit information (Combination), and explicit to tacit information (Internalization) (Nonaka, 1994).

Socialization requires the most interpersonal communication out of other information distribution methods. In socialization, knowledge is shared by observing senior employees who know the best operational details. The knowledge is deeply "ingrained," and it remains impossible to share it verbally. Two other information distribution methods, *combination*, and *internationalization* combine interpersonal actions and methods that do not require verbal communication, such as books, presentations, and reports. However, the social dimension increases the learning effect in all information distribution methods. "To bring personal knowledge into social context within which it can be amplified is necessary to have a field that provides a place in which individual perspectives are articulated, and conflicts are resolved in the formation of higher-level concepts" (Nonaka, 1994).

Externalization's mediums matter the most for budgets. They try to mobilize "the always somehow tacit knowledge" (Panahi et al., 2013) to be explicit through extensive formal and informal planning talk with various stakeholders (Henttu-Aho et al., 2013, Henttu-Aho, 2018). About externalization's mediums have been conducted only a limited amount of studies (Nonaka, 1994; Panahi, 2013). However, in accounting research, budgeting has been considered an excellent medium for revealing local knowledge through planning talk (Kloot, 1997; Goretzki et al., 2016; Henttu-Aho, 2018). Nevertheless, research has not determined budgeting discussions' most suitable conditions, physical or virtual, determining only that frequent face-to-face meetings are required (Johansson et al., 2003; Busco et al., 2006; Henttu-

Aho et al., 2013; Henttu-Aho, 2016; Østergren et al., 2011; Bourmistrov et al., 2013; Goretzki et al., 2016).

Panahi et al. (2013) and Faraj et al. (2011) are among a few studies examining whether local knowledge can spread in a virtual organization. Both studies agree with the traditional organizational learning research that a live discussion remains the most important mean of mobilizing tacit to explicit knowledge if no chance for observation exists. They consider that virtual discussions can convert tacit knowledge to explicit via online collaboration tools. However, these studies are only proxies on whether information can be distributed to budgets in virtual conditions. The formal and informal budgeting discussion must be enabled in a virtual context as well. As Kloot famously (1997) puts it: "Through interactive social processes of reflection, argumentation, and communication, local knowledge elements can be brought into the explicit dimension."

2.4 LOCAL KNOWLEDGE DISTRIBUTION TO BUDGETS IN VIRTUAL SETTINGS

Planning discussions and their "externalizing" nature (converts tacit to explicit knowledge) in information distribution require mutual trust (Busco et al., 2006). Local knowledge is also difficult to articulate - due to its sticky and ingrained nature (Brown et al., 2001; Vaivio, 2004). Therefore, it requires routinized, time-consuming formal, and informal dialogue amongst organizational members (Nonaka, 1994; Kloot, 1997; Busco et al., 2006; Barmeyer, 2019). Meetings should occur spontaneously with different stakeholders, in a place where the atmosphere supports mutual trust (Barmeyer et al., 2019). Faraj et al. (2011) note that most of the previous research considers that information technology (IT) has not facilitated essential discussions between online communities' (OCs) members, and the focus has been more on information management. Organizations appear not to have structured informal processes in virtual conditions that would increase the chance for tacit knowledge sharing (Barmeyer et al., 2019).

Diminished discussion, especially in iterative budgeting processes, can lead to ineffective local knowledge sharing. Due to the diminished discussion, a controller can receive too little information about qualitative market factors, converting to wrong actions in organizations. Eventually, the lack of information can lead to uncompetitive output (Argote et al., 2011).

However, more recent studies suggest that new technologies could provide a discussion platform for local knowledge sharing (Panahi et al., 2012). The views remain albeit contradictory, and there seems to be no agreement.

2.4.1 Information technology and local knowledge sharing to budgets

Faraj et al. (2011) call organizations operating in completely virtual settings online communities (OCs). They consider that the most crucial aspect of OCs is that information should be "fluid" amongst its members. Fluidity means that information should flow in OCs without constraints, and everyone should be able to share knowledge without hesitation and restrictions. Term 'fluidity' is consistent with the idea of continuous discussions during information distribution in physical settings. Communication has a central position in organizations: it enables local knowledge to flow to an organization's end products, increasing its competitiveness (Huber, 1991; Argote et al., 2011).

Knowledge sharing should take place often and in many ways in OCs like in traditional organizations (Faraj et al., 2011; Barmeyer, 2019). Faraj et al.'s description of information distribution's enabling conditions in virtual settings follows the previous view that effective knowledge sharing is achieved through extensive formal and informal discussions. However, some researchers have considered that tacit knowledge sharing is utterly hopeless through IT (Panahi et al., 2013). This school considers that tacit knowledge cannot be verbalized in any condition, and an individual's understanding of tacit matters can be achieved only through observations in the field.

Nonaka (1994) disagrees with the view mentioned above and considers that this is the case only when distributing tacit to tacit knowledge (socialization). Budgeting requires effective tacit to explicit knowledge sharing (externalization), and MCS have been proven to be able to distribute tacit to explicit knowledge in physical settings by several empirical studies (Vaivio, 2004; Henri, 2006; Busco et al., 2006; Henttu-Aho et al., 2013; Henttu-Aho, 2016; Henttu-Aho, 2018). Thus, it appears to be irrelevant to ponder in budgeting research whether tacit knowledge could be shared at all. Instead, the debate in virtual planning talk should concentrate on whether rolling forecasts and other planning methods can collect tacit knowledge from business units in virtual conditions.

Virtual settings' impact on planning talk quality appears not to be addressed in previous research. Although a warning sign of virtual settings' impact on it exists, many members of OCs only use a specific service but do not bring their intellectual capital to an organization's use in any way (Faraj et al., 2011). However, one should notice that previous studies have concentrated more on online services, such as Wikipedia. In these voluntary OC's, the content is created optionally, unlike in virtual budgeting discussions that remain obligatory in organizations.

In contrast, face-to-face meetings create a forum for meaningful discussions, leading to significant learning (Kloot, 1997; Busco et al., 2006). Especially in budgeting meetings, learning occurs since everyone is obliged to share information. Furthermore, sharing opinions is easy in these meetings since individuals create shared understanding through iterative planning talk (Busco et al., 2006; Goretzki et al., 2016). Nonaka et al.'s famous research in information distribution (1994 and 1995) implies that physical face-to-face meetings are essential for budgeting, primarily due to the "social dimension" that creates trust and shared understanding between different stakeholders. Without trust, an accounting system cannot respond to external changes (Busco et al., 2006)

However, new IT evolutions are considered to enable discussion to evolve when working virtually (Nonaka et al., 2000). Panahi et al. (2013) summarize the newer branch of information distribution research, which considers IT a prominent platform to distribute tacit knowledge. However, the scarce empirical research of virtual knowledge distribution can provide only proxies on how knowledge distribution could occur during virtual budgeting discussions.[2]

[2] Waizenegger et al. (2020) conclude in their recent COVID-19, remote work, and team collaboration related study, how local knowledge sharing might deteriorate due to decreased home working conditions that impact mental health, productivity and work-life balance of employees. Previous literature has also concluded that there might be some issues with remote working for local knowledge sharing. For example, work-life boundaries might become dimmer when working completely in remote conditions (Golden, 2012). However, the change from offices to virtual collaboration has not ever happened to this vast extent and quickly as in spring 2020 in management accountants' context. Significantly, controllers' physical presence has been considered to bring lots of added value to discussions due to numbers' vague nature and the different historical perceptions between business units and control functions (Dent, 1991; Järvenpää, 2001; Vaivio, 2004; Vaivio et al., 2006; Busco et al., 2006; Goretzki et al., 2016; Henttu-Aho, 2018). Therefore, virtual settings might differ to some extent in controllers' case, and only a higher-level theoretical framework of virtual settings and information distribution should be applied, and further insights with a case study should be provided.

Figure 7 presents prominent ways of distributing local knowledge to budgets in virtual settings:

Virtual collaboration	
Socialization *(tacit to tacit)*	**Externlization** *(tacit to explicit)*
-Online real-time meetings *-Synchronous communication (Chat)* *-Online community of practice* *-Groupware systems* *-Social media*	*-Answering questions* *-Annotations* *-Blogs/Wikis* *-Discussion forums* *-Collaborative systems* *-Groupware systems* *-Phone/video conferencing*
Combination *(explicit to explicit)*	**Internalization** *(explicit to tacit)*
-All forms of technologies *-Text search* *-Document categorization* *-Podcast/Vodcast* *-Blogs/Wikis* *-RSS* *-Mashups*	*-Visualization* *-Video/Audio presentations* *-Online learning* *-E-mail* *-Webpage*

Figure 7 Local knowledge distribution mediums in virtual settings, adopted from (Nonaka, 1994; Panahi et al., 2013)

Allocation in figure 7 to socialization, externalization**,** combination, and internalization follows Nonaka's (1994) classic knowledge creation model (SECI) but differs by highlighting mediums that can be harnessed in virtual conditions. It concludes that all information can be shared within an organization in virtual settings, but the lack of empirical research implies that no absolute conclusions can be made. However, it provides possible signals of how tacit information could flow to budgets in virtual settings. Virtual mediums enable both real-time and offline communication (Panahi et al., 2013). Ideally, virtual settings can provide a platform for formal and informal discussions, fundamental for budgeting (Busco et al., 2006; Goretzki et al., 2016; Henttu-Aho, 2018). The increase in Microsoft Teams- meetings in Finland in mid-March 2020 due to the COVID-19 (Kauppalehti, 16th March 2020) implies how planning discussion moved temporarily to completely virtual conditions. Nonetheless, the quality of virtual planning talk remains hidden due to the lack of empirical research.

Faraj et al. (2011) highlight the most robust possibilities and uncertainties with virtual settings to information distribution. First, they summarize the possible vicarious nature of virtual planning talk as follows: "Communication may happen between people who have never met each other and share different interests." Former notion creates a risk to understand feelings and frames of each other that have been considered to be the most crucial feature of physical meetings for budgeting (Weick, 1995; Busco et al., 2006; Henttu-Aho et al., 2013; Goretzki et al., 2016; Barmeyer et al., 2019), impacting on sensemaking and trust that helps to achieve decisions (Maitlis, 2005; Busco et al., 2006). On the other hand, working in OCs can decrease the hierarchy level (Faraj et al., 2011). In virtual settings, it is also possible to communicate with multiple people, with multiple channels simultaneously (Panahi et al., 2013).

In OCs, tensions, positive or negative, arise due to different opinions and fluctuations of OCs members (Faraj et al., 2011). As noted, previous virtual information distribution studies have concentrated mostly on voluntary OCs, but the notions can be expanded to traditional organizations. Some of the tensions could occur in traditional organizations that work in virtual conditions, and therefore the possible pitfalls and benefits of virtual settings are essential to recognize for them. Organizations could probably improve their virtual planning talk by noticing the tensions that arise in the virtual context.

Passion, *time*, *socially ambiguous identities*, *social disembodiment of ideas,* and *temporary convergence* create tensions for OCs (Faraj et al., 2011). *Passion* creates a basis for success in OCs since it increases content creation. However, in stable organizational structures, passion can lead to debates and tensions that have been considered difficult to solve in virtual conditions (Hinds et al., 2003). It makes people unwilling to compromise since virtual debates tend to lead to win-lose situations, not win-win situations (Faraj et al., 2011). The specific view is opposite of formal and informal face-to-face meetings that are considered to create an atmosphere of understanding and trust (Busco et al., 2006; Becker et al., 2016; Goretzki et al., 2016; Palermo, 2018; Barmeyer et al., 2019). Virtual platforms seem to have room for improvement so that employees could understand each other and their own possible biases. The absence of trust can lead to a situation where a losing party will lose interest altogether towards knowledge creation (Faraj et al., 2011).

Second of the tensions, *time*, arises when members contribute more content in OCs. The positive aspect of time is that employees can be more involved in OCs, creating more valuable knowledge (Faraj et al., 2011). This notion is consistent with budgeting discussions in physical

organizations: the more people are involved in discussions and knowledge creation, the more versatile and value-adding decisions are made (Vaivio, 2004; Henttu-Aho et al., 2013). On the other hand, if some OCs' members use significantly more time than others, the others might not dare to join as actively in virtual discussions (Faraj et al., 2011). The louder employees seem to obtain more professional status in these matters, making other employees hesitant to challenge their views. The active participation makes frames of the louder members to override the opinions of others. The situation resembles framing contests (Kaplan, 2008), where a strong individual's decisions might lead to biased actions in an organization.

Socially ambiguous identities serve as the third tension in OCs. Most people know each other in traditional organizations, but workforce changes would undoubtedly occur if virtual settings continue for an extended period. In workforce rotation, new individuals do not share social relationships, necessarily not disclosing more personal information when communicating (Qian et al., 2007). Trust is a base for more open discussion (Nonaka, 1994; Nonaka et al., 1995; Argote et al., 2011; Barmeyer et al., 2019), especially in budgeting due to its quantitative nature (Busco et al., 2006 Goretzki et al., 2016). Faraj et al. (2011) note that virtual settings might have problems with creating trust. Notwithstanding negative aspects, anonymity has been noticed to increase risk-taking. Correspondingly, some people could be more open speaking about their ideas (Marx, 1999).

Ideas that cannot be associated with any employee in OC, *social disembodiment of ideas*, form the fourth tension. Ideas can evolve independently of their authors when shared virtually, supporting innovativeness in an organization. A specific idea's founder becomes irrelevant since innovations can evolve independently, and all information is saved simultaneously when created (Faraj et al., 2011). On the other hand, the social embodiment of ideas can lead to a situation where no one is accountable, leading to decisions that are not based on reality (Faraj et al., 2011). Instead, individuals might try to push their own agenda. Biased decisions could create a risk, especially for budgeting discussions since then, an organization's actions might not answer to exogenous and internal changes in the most outstanding manner (Hansen, 2003; Henttu-Aho et al., 2013; Henttu-Aho, 2016). However, employees are not anonymous in formalized organizations, making specific tension irrelevant to virtually operating controlling functions in the short term.

In OCs, concentration can focus temporarily on some direction or goal, like in physical organizations. The phenomenon represents a fifth tension for virtual organizations, *temporary*

convergence. The convergence is, although temporary in an OC due to its need for "fluidity." The feeling of safety that anonymity brings could make employees share their opinions more fluidly (Faraj et al., 2011). Faraj et al. fine down the idea of safety further - lack of hierarchy could push towards new tangents of ideas. However, the temporary convergence could also create dreadful tension if an employee only creates knowledge based on their own ideas and does not consider the ideas of others. It decreases an organization's critical thinking and shrinks the passion of other members. Silva et al. (2008) conclude that all feedback, negative or positive, is considered an acknowledgment of individuals' contributions in organizations, increasing their passion for knowledge creation.

Negative tensions in OCs could be solved by adding four elements to an OC's knowledge management capabilities (Faraj et al., 2011). First, OCs should have *versatile roles* for different moments. For instance, a mediator could negotiate during moments of disagreements, or organizers could be assigned to ensure that different teams discuss with each other. Second, best practice OCs should *channel participation* so that employees could get notified on time of the most recent changes. Constant updates should keep the discussion fluid. Third, *dynamically changing boundaries* should be applied in OCs. The term stands for rules encouraging or discouraging communication frequently. Boundaries should ensure that organizations do not lose the focus of their primary goals. Lastly, the technical platform must enable a prosperous user experience, making possible "fluid" discussions due to motivated users.

To summarize, a virtually operating organization can enhance its planning talk by noticing possible challenges with virtual settings and adding corrective elements to its virtual information distribution processes. Efficient knowledge flow is an integral part of organizations' ability to predict the uncertain future (Kloot, 1997; Henttu-Aho et al., 2013; Goretzki et al., 2016; Henttu-Aho, 2018). The significance of the corrective elements in budgeting discussions is highlighted, especially in the thesis' current context (2020): all planning talk was moved to virtual reality due to the COVID-19.

3 METHODOLOGY

3.1 EXPLORATORY CASE STUDY AS A RESEARCH METHOD

An exploratory case study in three global manufacturing organizations was conducted to examine the thesis' research question. As a research method, a case study offers an enhanced understanding of organizations' complex management accounting issues. All organizations have variable historical, social, and economic contexts, requiring deep understanding from a researcher. Holistic perception can be achieved finest through discussions or observations, which a case study as a method encompasses (Scapens, 1990). It also considers conflicting views between various employees as equal - consequently providing an enriched view of the researched phenomenon or phenomena (Ahrens et al., 1998). Especially, issues related to management accounting should be researched with a qualitative approach. A case study's social dimension helps a researcher understand better ambiguity that accounting tasks include largely (Scapens, 1990; Ahrens et al., 1998; Busco et al., 2006; Henttu-Aho et al., 2013; Goretzki et al., 2016). Local knowledge locates in the field, and the case study's interviews are a suitable way to mobilize it for the research.

However, management accounting research has begun to embrace case studies and other qualitative approaches a relatively short time ago (Scapens, 1990; Ahrens, 1998). Lukka et al. (1995) explain that the quantitative approach has been dominating traditionally in accounting research since the validity and generalizability were considered to be gained better through larger sample sizes. Although their notion certainly holds to some point, the argument is partly invalid - as a method, the quantitative approach leaves individual opinions aside and focuses on finding only a specific predictive pattern of the future (Ahrens, 1998). Instead, a case study can be described above all as "exploratory" in its nature since it dives deep into a novel phenomenon with smaller sample size. Case studies can be replicated in different contexts, leading to diminished generalizability issues. However, a researcher should also have the right skills and capabilities, as discussed later (Scapens, 1990).

Case studies are especially suitable for emerging topics and when no previous empirical observations exist (Henttu-Aho et al., 2013; Malmi et al., 2003). Understanding ambiguous topics increases, and more value-adding conclusions can be provided for future research (Eriksson and Kovalainen, 2008). For instance, Dent (1990) and Vaivio (2004) illustrate how

ambiguous topics are explained through a case study in accounting. These studies present the "exploratory" group of case studies. Scapens (1990) concludes that case studies' exploratory nature is essential, whereas the other case study groups are potentially useful for management accounting research. The exploratory case study reveals the explanation behind a novel phenomenon or phenomena. Nevertheless, he adds that all case studies are unique by their nature, and no clear-cut deviations to specific groups can be made. The case studies can be divided into descriptive, illustrative, experimental, and exploratory groups (Scapens, 1990).

Descriptive case studies are used for describing accounting practices that are currently used in organizations. Illustrative case studies try to shed light on new innovative accounting solutions that organizations have brought into use. However, illustrative case studies' problem is that subjectivity remains at a researchers' end since they determine what is innovating. Experimental case studies are utilized when theories developed by researchers are tested in real-life circumstances. These studies endeavor to discover the advantages and challenges of previous theories with experiments in the field. Last, exploratory case studies are employed when understanding accounting practices ought to be expanded. In specific case studies, the previous theory provides possible explanations for an accounting phenomenon or phenomena, but a researcher makes nondefinitive generalizations.

This thesis leans towards the decisive exploratory case studies. Previous theory has provided rich conclusions that local knowledge is gained the best through physical discussions (Polanyi, 1966; Nonaka, 1994; Lubit, 2001; Vaivio, 2004), but only a limited amount of research has examined local knowledge distribution in virtual settings (Faraj et al., 2011; Panahi et al., 2013). Also, the little amount of research conducted on local knowledge distribution in virtual settings remains contradictory since some researchers consider it impossible to be distributed through information technology, whereas others argue that it is possible to some extent. Besides, there seem to be no previous theories conducted on virtual planning talk. Consequently, this thesis attempts to provide future qualitative or quantitative research conclusions to validate other contexts or larger sample sizes (Scapens, 1990).

The exploratory nature of this thesis' case study is also highlighted from another perspective. Research has provided mediums that illustrate how local knowledge can flow in virtual settings. However, this thesis does not predetermine only certain mediums for knowledge sharing virtually since the thesis follows the emic account in the case study (Henttu-Aho et al., 2013). The thesis is open for several new knowledge-sharing ways in virtual settings and does

not follow per se the ex-ante definitions. As discussed later, virtual settings are new for the case companies since they have before COVID-19 relied on hybrid settings when distributing local knowledge to budgets. Nevertheless, the thesis must follow the etic modes to compare the case study's results with the previous organizational and management accounting literature (Henttu-Aho et al., 2013). The thesis' exploratory nature sharpens the benefits and challenges the virtual settings bring to planning talk in organizations.

Case studies can be further divided into theory discovery and theory refinement studies (Vaivio, 2008). The former studies attempt to find novel insights from the field, whereas the latter have well-built ground in theory. This thesis contains both dimensions. On the one hand, the case offers insights for further considerations about planning talk in virtual settings, and on the other hand, the thesis contributes to the previous research by sharpening the strengths and weaknesses of local knowledge sharing in virtual conditions. The thesis has a robust theoretical standpoint that local knowledge sharing is vital for the organizations' budgeting purposes. However, it moves to an unexplored area by providing possible conclusions of virtual planning talk.

To summarize, the thesis' case study approach offers rich insights into a relatively unknown phenomenon, virtual planning talk, with extensive interviews in the field. As Ahrens et al. (1998) conclude, the case study approach offers a researcher a possibility to capture an organization's multiple tensions and ambiguities. However, there remain also weaknesses that the qualitative approaches contain. The biggest problem lies in a researcher's individual bias when selecting the insights presented in the case (Scapens, 1990). Also, multiple observations and filtering the essential insights without leaving anything valuable might diminish the case study as a research method (Ahrens et al., 1998). The problems to validity and generalizability that the deficient researcher skills could bring if ignored are discussed next.

3.2 RELIABILITY AND VALIDITY OF THE CASE STUDY

Accounting research calls quantitative research methods "traditional" (Scapens, 1990). The term arises since those methods seem at first to support a research's reliability and validity better than qualitative approaches. Both properly secured reliability and validity are critical elements of scientific research and allow future research to lean on a conducted thesis or research paper. However, the case studies can secure a research's reliability and validity as

well as the quantitative approaches. Nonetheless, the standpoint should be expanded from the amount of data to more unique and more prosperous contexts that can be tested with a new case or quantitative studies in the future. This nature of case studies can be called "patterned" since case studies and theory have two-way interaction: a study's possible biases can be detected with further case studies (Scapens, 1990). Also, individual researchers can themselves increase the reliability and validity of a case study. McKinnon (1988) later illustrates the threats that should be considered when utilizing qualitative methods in management accounting.

A researcher's holistic perspective of a phenomenon or phenomena assures reliability in case studies (Scapens, 1990). In other words, reliability means that a researcher has gained a vast understanding of the "large net of various interdependencies" in a specific organization (Ahrens et al., 1998). To gain vast knowledge, a researcher should consider historical, social, and economic factors that affect a company (Scapens, 1990). By assuring reliability, the probability of valid findings increases. Latter represents the validity, meaning a researcher who can choose correct material and provide a rich overview of the studied case for the research (Scapens, 1990).

Qualitative management accounting research seems to have nonstandard criteria for evaluating a case study's reliability or validity. For instance, Kihn et al. (2015) conclude in their large set quantitative paper (212 case studies considered, between 2006 - 2015) that 48.1% of the case studies did not have any standard evaluation criteria regarding reliability and validity. Thus, there remain no fundamental theories on evaluating the reliability and validity of a case study. However, McKinnon (1988) argues comprehensively four threats that should be considered when conducting qualitative research. By considering properly observer-caused effects, observer bias, data access limitations, and complexities & limitations of human minds, a study's reliability and validity can be improved but certainly not assured entirely.

Observer-caused effects arise from a researcher's presence in an interview situation itself. It may influence an interviewee's behavior, like a choice of words, and result in too "thick" results. The results might also become entirely or partly distorted due to an observer's presence – the facts may change if the interviewee does not consider him/herself comfortable enough. McKinnon (1998) determines that insecurity arises if a participant feels that the observer is working for management. Consequently, a researcher should be able to remove all insecurity from the interview. A researcher's objectivity should be communicated to the participant, and other means of creating a secure feeling should be exploited.

The second threat, observer bias, arises when a researcher's interpretations affect the outcome. All case studies certainly include observer bias to some extent, but a skillful researcher should be conscious of its existence and attempt to minimize to an extent it is possible. Without being conscious of one's biases, one could think that what they perceive is an absolute truth. However, by noticing bias, observers can consider whether their view of a situation represents an objective view. Observer bias is present continuously during the interview: it is also present in informal discussions and documentation analysis (McKinnon, 1988). Scapens (1990) adds that many case studies are conducted in teams that should reduce biased interpretations. He concludes that if working in a team is impossible, a study should be sent back to the interviewees for checking before publication.

Data access limitations and complexities & limitations of the human mind represent the last threats for a case study's reliability and validity. Former refers to limitations with time in the field and accessibility to people and documentation. An observer cannot know if the observed phenomenon or phenomena are only coincidences or will hold long-term. An observer might also run into problems when trying to clarify some of the "loose ends" appearing during interviews - additional documentation or meetings might not be granted. Complexities & limitations of the human mind arise simply due to humanity. Interviewees can forget some things by accident or do not mind telling facts if a researcher does not provide the correct questions (McKinnon, 1988). Therefore, enough time should be reserved for interviews to perceive a rich understanding of the field (Ahrens et al., 1998; Vaivio, 2008).

The case study's reliability and validity have been attempted to achieve through a holistic understanding of case companies. Previous theories behind budgeting, local knowledge, organizational learning, and virtual information distribution were internalized before drafting questions or going to the field. Also, the case companies' publicly available materials were utilized so that the organizations' historical, social, and economic contexts would be revealed to the researcher. More time was spent with relevant topics during the eleven interviews by gaining a holistic approach. Undoubtedly, access to the internal documentation would have increased the researcher's understanding of the organizations. However, the absence of specific documentation was acknowledged, and greater emphasis on public documentation was addressed.

All interviews were also anonymous, which should enrich the case study's conclusions as well. The interviewees could share their insights into virtual planning talk without hesitation or

possible fear of their managers' response to their comments. The three case companies' anonymity should increase the study's value also since all case companies are listed in OMX Helsinki, and they might be somewhat concerned with their statements without anonymity. During the interviews, it was also acknowledged that taking notes could lead to subjective interpretations. Consequently, all the interviews were transcribed. It made it possible for the researcher to analyze interviewees' answers again and triangulate objectively between them. Moreover, the interviews were all conducted in Finnish, making it possible for the interviewees to express their views in their mother tongue.

Research bias is always present to some extent (Scapens, 1990). In this thesis, the possible emergence of researcher bias was acknowledged before conducting the case study through reading qualitative management accounting literature. Also, the business to business nature of the case companies decreases the observer bias since there existed no strong preconceptions of them before conducting the interviews. Besides, the novelty of the researched topic assures that the researcher did not have any prejudices, how would the virtual planning talk occur in the companies. Moreover, the case's exploratory nature ensured that both advantages and drawbacks were considered during the process. However, only one researcher conducted the case study, making the notions always somehow biased (Scapens, 1990). For this reason, the thesis was sent to interviewees before publishing, making their comments truthful by eliminating possible misinterpretations.

3.3 CONCLUDING GENERAZIBILITY OF THE THESIS

The purpose of the thesis' case study is to explain how planning talk changes when virtual settings take place and whether the changes affect a controller's business understanding behind budgets. The case study examines the matter by interviewing eleven management accounting professionals who work in three global manufacturing organizations. All interviewees are management accounting professionals since budgeting is part of their main tasks. In turn, the case companies are globally operating manufacturing organizations that need to lean vastly on budgeting and its planning ability. Case companies all have their individual challenges, but the global dimension creates shared obstacles to adapt to a swiftly changing environment. The companies' similar global context and concentration on budgeting offer future research a possibility to further repeat the study's notions. As noted, the reliability and validity issues have been considered, increasing the study's generalizability.

The number of interviews in this case study is certainly too small for quantitative purposes, but the perspective in qualitative case studies is to provide a rich understanding of novel accounting phenomenon or phenomena (Scapens, 1990). Thus, a case study's generalizability depends on an individual researcher's skills and capabilities to provide a rich understanding with valid methods for other research purposes (McKinnon, 1988). Understanding is gained through a holistic understanding of studied case companies (Scapens, 1990; Lukka et al., 1995). Perceiving a holistic view also depends on case companies' amount: only one or a few organizations should be included in the case study (Vaivio, 2008). A limited amount of case companies should ensure that a researcher has enough time to "dive deep" into the investigated phenomenon.

The amount of the thesis' case studies is consequently limited to three. The cross-sectional nature of the case study limits the possibilities to gain long-term understanding, but the three different contexts can provide proxies for the future. Some case companies have had more experience of virtual collaboration and some less. Thus, it is vital to capture these different contexts in this study. However, the relatively small number of case companies offered the researcher enough time to gain a holistic view of each case company's variable conditions. For instance, the case includes a vast amount of quotations that have been selected comprehensively to provide a clear storyline for the reader. Moreover, a theoretical framework should not be too vast behind a case study (Vaivio, 2008). Thus, this study's literature review has concentrated solely on providing a rich understanding of budgets' role in releasing local knowledge. By diving deep into a clearly defined theoretical framework, the researcher has been able to ask only the relevant questions during the interviews.

Access to the case companies was obtained by contacting the CFOs from two case companies and one controller through an internet-based professional network, LinkedIn. After creating the connection, the study's purpose was explained thoroughly to them, and more interviewees were requested for the study to perceive enhanced holistic understanding through triangulation. Before the first case interview, relevant theories were studied, and a semi-structured interview frame was created (Appendix 9.2), enabling the interview time to be utilized as effectively as possible. A semi-structured interview approach was exploited in the interviews, making it difficult for the interviewees to plan all their answers. The approach probably reduced the pressure to answer in a certain way and made it possible for the interviewer to ask clarifying questions when needed.

All interviews were conducted in Finnish, recorded, and transcribed. Transcribing enabled the researcher to triangulate between interviews and analyze them continually. Significantly, the three case companies required constant review compared to a single case study. A single case study might be better in providing enriching insights (Vaivio, 2008). Notwithstanding the specific view, the critical issue eventually is not the number of companies in a study but a researcher's ability to understand organizations' socially complex dynamics (Dyer et al., 1991). Reliability and validity have been attempted to achieve in the thesis by concentrating on the previous theories behind local knowledge distribution, the organizations' variable contexts, and possible challenges during case interviews. Therefore, the thesis' conclusions appear to be generalizable and credible theories for further research.

4 CASE STUDY: EXPLORING VIRTUAL PLANNING TALK IN THREE GLOBAL MANUFACTURING ORGANIZATIONS

The case study's empirical evidence attempts to reveal the possible factors in virtual settings, impacting the decisive local knowledge flow to global manufacturing organizations' budgets. The previous theoretical framework argues that formal and informal planning discussions are vital for organizations in the middle of today's contingencies. However, it remains hidden how well these discussions are conducted in virtual conditions. Company A, Company B, and Company C operate in different manufacturing industries and have unique challenges alongside typical uncertainties related to global organizations' market environment. The forward-looking ability of budgeting is indeed needed in these organizations.

The recent pandemic, COVID-19, has affected markets' ambiguity, and the empirical evidence of this thesis delimits its effect on the quality of budgets. Ambiguity has emerged, primarily due to increased regulation that has impacted the organizations' manufacturing abilities. For instance, the case companies were not sure where the employees could work during the pandemic. Also, ambiguity in the regulative environment during pandemic affects the demand for their products. Thus, budget variances have increased in all case companies, making it impossible to determine whether the deteriorated planning ability has occurred due to the pandemic itself or increased remote work.

> *"The situation has been extremely odd this year since previously we have not ever had a question whether we can continue our operations or not." (CFO, Company A)*
>
> *"The accuracy of the forecasts has been horrible* (during the pandemic)*... but it is impossible to determine whether it is due to virtual settings or the overall emerged uncertainties in the business environment." (SVP, Group Controller, Company B)*

Consequently, the thesis does not take a stance on the budgets' quality but clarifies the possible effects of virtual settings on the local knowledge distribution to budgets, i.e., planning talk. These globally operating case companies have previously relied on remote work to some extent but never operated solely in virtual settings. Thus, the empirical study aims to shed light on how this abnormal situation has impacted the planning talk. Next follows the introduction of the case companies and their planning methods. After that, the results of the case study are unfolded.

4.1 STRATEGIC CONTEXTS OF COMPANY A, COMPANY B, AND COMPANY C[3]

Company A

Company A is one of the largest stock-listed organizations in OMX Helsinki that generated near 10 billion euros of revenue in 2019. It is a globally operating manufacturing organization that has effectively tackled constantly emerging disruptive forces. Their net working capital was significantly negative, and their annual operating result margin was over 10% in 2019. That year, they also received a rare A ranking for manufacturing organizations from CDP that measures organizations' environmental friendliness. They operate in the building industry's sub-section, and their products' demand is tied with urbanization and digitalization. Due to the vast global growth of both trends, their business has prospered well.

Their success is also partly derived from the company's structure divided into manufacturing and service segments that form equal revenue share. The global trends of digitalization and urbanization drive their devices' demand, increasing the size of the maintenance portfolio. Company A grew in all its markets in the devices segment except one in 2019. The growth in their devices' business positively affects the service unit that takes care of the devices' regulated maintenance. The devices' quality must be high, making the service unit business "run-rate" type - meaning that the generated revenues do not variate much in this segment. Company A's service unit can also take care of its competitors' product maintenance, improving its service unit's results even more: they significantly increased their revenue in all their business areas in 2019 in this segment.

Global markets involve lots of competition, and Company A considers that they can outplace their competitors by concentrating on customers and their needs the best. Also, they try to maximize the quality of their products and innovate new solutions regularly. To do this, they need to be prepared for multiple risks. In their 2019 Annual Review, Company A concluded that their most significant risks are related to derived demand from other industries, geopolitical tensions, and foreign exchange (FX) risks.

Geopolitical tensions might impact their supply chain since those could force them to close some of their operations. Moreover, those might affect their suppliers and customers. Company

[3] The case companies' strategic contexts are formed based on the interviews and organizations' 2019 annual reviews. However, the annual reviews are not disclosed in the references due to the case companies' anonymity.

A's global nature impacts the FX risks since its products are sold in multiple currencies, and the changes in currency rates can affect its results. Especially, the need for quick actions towards competitors' movements is recognized in their risk management policy. Last, the recent pandemic has negatively impacted urbanization, increasing the ambiguity in their business environment. Consequently, effective and continuous planning is essential for Company A as well, albeit they have been performing exceptionally well.

Company B

When considering the Finnish exporting structure, Company B and its competitors are in influential positions, holding a 20% to 25% share of the annual total export. Company B is listed in the OMX Helsinki and generates approximately 10 billion euros in revenue annually. They are a manufacturing organization that has gone through an extensive business transformation process in the previous years. Digitalization is the biggest megatrend that has driven Company B to conduct significant changes in its product portfolio. They still utilize the same raw materials, but the products have transformed to support their end-users' current needs better. However, the transformation process has been demanding and has not solved the issues entirely with the decreasing demand rates. That has led to stabilized or even decreasing revenue rates.

On the other hand, with c.a. 10% operating result, they are one of Finland's biggest corporate taxpayers and can continue their business transformation with constant research & development (R&D) actions. Company B invested a significant amount of its revenue into R&D in 2019. With that contribution, they seek to automatize their processes and develop innovative solutions. They also try to tackle their challenges by forming alliances with new innovative start-ups & universities and encouraging their employees to generate ideas with a novel innovation tool. These actions led solely to dozens of innovation campaigns in 2019. In total, they have hundreds of patents registered. An immense weight in the innovations has been laid mostly on environmental issues.

Nonetheless, these innovations should help Company B prosper, increasing the need for the right investments. Consequently, the significance of budgeting and its planning ability is highlighted in Company B: the forward-looking forecasts should reveal which solutions function at the markets. Also, as a globally operating organization, the typical global uncertainties remain at Company B. For instance, they should be able to cope with geopolitical

issues, FX- rates, and other macro-economic factors. The increased regulation in their main business areas and the need for new strategic investments could affect their EBITDA generation in the following years. Also, COVID-19 might pace up their once-dominant product's disruption increasingly. Thus, the pre-eminent planning ability of budgeting is highlighted to an increasing extent in Company B.

Company C

Massive investments in R&D have transformed Company C into a globally operating manufacturing organization. By generating close to 15 billion euros revenue in 2019, it is among the most considerable stock listed organizations in OMX Helsinki. Environmental change is the most substantial mega-trend that has driven massive R&D investments in Company C. They used to dominate solely with their old product in the Finnish transportation industry. However, due to more comprehensive regulation regarding emissions in Finland and almost all countries globally, Company C has also developed an alternative solution. By this solution, Company C promises to help its customers reduce emissions by tens of millions of tons by 2030. Its old product forms the most significant revenue share, but the increasing profits are made with its novel solution. Innovation has made Company C's market capitalization soar - it has skyrocketed many hundred percent during the previous years. Besides, with their novel solution, they are dominating a particular segment's global markets.

Company C concludes in its 2019 annual statement that it will continue its success by several actions. They will make constant R&D investments to protect its novel solution's globally leading position, improve its novel solution in different transportation segments, and increase its general business model's efficiency. One-quarter of Company C's personnel work in R&D, and Company C has also formed strategic alliances with top universities and research institutions. By concentrating on R&D, Company C has achieved around 50% of its novel solution's segment's global production capacity. However, they seek ways to continuously increase it, making the product answer on the rising demand. Company C's old product is still the leading solution in the Baltic Sea region, but the company wants to increase its profits in this segment by developing the supply-chain structure. Overall, the transformation has been very successful, but global markets' changing conditions create a demand for continuous improvements.

Geopolitical tensions, regulatory changes, competitors' new technologies, and possible new entrants create uncertainty for Company C. It must be able to answer to the market demand as a manufacturing organization, otherwise losing market share. The uncertainties in its primary raw material producers' geographical areas make the production certainty unstable, possibly affecting its profits. Both their old and novel solutions are highly regulated as well. The laws frequently change, requiring Company C to be very comprehensive with its output's quality. Also, the competition increases constantly due to environmental change and its impact on legislation. As a result, Company C's competitors develop their equivalents or possibly altogether new solutions for transportation needs. The hectic environment and other typical issues for globally operating organizations create a need for superb planning abilities of budgeting in Company C.

4.2 PLANNING IN CASE COMPANIES

Company A

Planning is considered an essential but relatively easy task in Company A. Especially, their service segment's results are easy to predict since those are bind to the devices amount in the markets. There is typically only a small variable element in the service business - the additional maintenances and upgrades of the sold devices. Its business has also dispersed to multiple geographical locations, which flattens the possible positive or negative budget variance. In normal circumstances (before COVID-19), the planning process was conducted mainly in hybrid settings since employees worked from the many global offices. Due to Company A's bottom-up approach, the information was collected from multiple geographic locations with virtual collaboration tools. However, the business understanding behind the budgets was enriched with traveling and sudden informal meetings with different stakeholders, vanishing completely when the pandemic emerged.

> *"In global corporations, like Company A, the number collection process from the countries is very structured, and it does not matter whether the controller sits at home or office." (Director, Business Controlling, Company A)*
>
> *"The concern is not that we would not receive numbers but the understanding, what to do and how to react, improves the probability to focus on the right topics." (CFO, Company A)*

> *"Forecasts guide our actions and help understand more significant variances… Those also help develop our business further and set the goals respective to our visions." (Business Controller, Baltics, and Finland, Company A)*

Company A trusts three different forecasts when planning. These are a 3-year long-range plan (conducted every third year), a 2-year mid-term plan (conducted every spring), and a short-term forecast that is conducted monthly. The forecasting process is bottom-up, meaning that group controlling receives the forecasted results from their different geographical business areas. After receiving the results, the group controllers have booked virtual calls with area business leaders to discuss and challenge their views. Eventually, the consensus is found during the discussions and communicated to the executive board virtually or physically if possible.

Company B

Company B manages all budgeting and planning in Microsoft Excel currently, but a significant transformation to a new budgeting system is on-going. They are moving to the new system due to multiple improvement needs. One notable reason is that the novel budgeting platform will include a driver-based planning approach that increases budgets' predicting ability. Also, their planning process has moved more towards iterative discussions in recent years. Whereas historically, the insights were only gathered in numerical forms from the business units.

Company B has around 100 manufacturing units that form larger business units and geographical areas. A management accounting professional's task in group controlling is to gather monthly forecasted results from different areas and discuss those views with them. The budgeting process has been partly virtual before the pandemic, but the work has occurred mainly from the office - some of the controllers have even sat together during the discussions. Like in Company A, all traveling was abandoned at the organizational level, and sudden informal knowledge exchange disappeared when the COVID-19 emerged.

> *"Before the pandemic, we had monthly booked meetings where we partly met face-to-face with the business units management, but there was already always someone at the other end of the phone call as well" (SVP, Group Controller, Company B)*

A 5-year long-term plan is conducted every spring at Company B to understand a broader overview. Company B trusts monthly in a 12-month rolling budget supported by a mix of virtual and physical iterative discussions between management accounting professionals and

business units. Also, Company B has business and innovation reviews quarterly that are usually conducted face-to-face. The company's management accounting professionals describe the atmosphere of virtual and physical meetings as mostly very open.

Company C

Their business units' management and group controlling are located mainly at their Finnish headquarters. Due to the management's local presence, it has been relatively easy for a management accounting professional to discuss face-to-face, especially about the fixed costs. There are many fixed costs in Company C since their newer solution at the markets can be considered a "growth business" that includes project costs. However, a small fraction of the management and all site controllers are working overseas. Consequently, the discussions have been virtual to some extent already. Nonetheless, compared to Companies A and B, the controllers in Company C are more used to physical settings. The genuine global status is relatively new to people, making employees at headquarters meet internal stakeholders physically. As a result, the move from physical to virtual settings was huge and required more effort than in Companies A and B.

> *"Before COVID-19, the threshold for calling was quite big, and people always reserved a negotiation room for a half an hour matter." (Business Controller, Company C)*
>
> *"Some of the employees have had problems with the most basic things in virtual settings. For instance, we have employees that struggled to put VPN* (cybersecurity tool, enables access to an organization's databases in remote conditions) *on at their home offices." (Business Controller, Company C)*

Forecasts are considered vital and include monthly discussions with business units, like in Companies A and B. Their monthly rolling forecasting process is conducted for the next 15 months, and once a year, there is also conducted financial plans for the next ten years and three years. Company C considers rolling forecasts useful tools since they concentrate on business opportunities rather than precisely following the costs.

4.3 RESULTS OF THE EXPLORATORY CASE STUDY

Formal and informal budgeting discussions were forced to move into virtual settings when the COVID-19 pandemic emerged in March 2020. Companies utilized especially Microsoft Teams and Google Meet applications for virtual collaboration. The change from face-to-face planning discussions to virtual calls seem to have happened mainly satisfactorily due to the vast technological evolution of digital collaboration tools and since most stakeholders have known each other before the "new normal" in planning. The case companies' management accountants also consider forecasting processes and formal planning talk rather effortless tasks since they have created functional virtual budgeting processes in the previous years. Their global nature has already created a need for effective virtual collaboration.

However, face-to-face meetings remain mostly preferred in all case companies when planning - that is only not always possible due to their global presence. Moreover, all formal budgeting meetings have not happened virtually in the past, and besides, the meetings have also had informal features. Many business ideas have been shared during lunches and coffee room discussions. The controllers feel that shared understanding and trust are achieved more effortlessly when they and operational employees can meet around the same table. Consequently, the budgeting could lack some vital parts. Local knowledge arises from the field, and virtual settings appear slightly to disturb the communication. Especially, meetings with a more informal dimension where a more enriching overview of the business can be achieved appear to be endangered.

4.3.1 Virtual planning talk in formal budgeting meetings

4.3.1.1 Power of face-to-face meetings

Face-to-face meetings were possible only occasionally before the pandemic since a substantial share of the organizations' operations are locating overseas. However, if possible, controllers in the case companies consider that physical meetings would suit better when creating shared understanding and trust with business units' employees. It does not seem to matter whether the meetings' nature is formal or informal, but the face-to-face interactions appear to enhance understanding. It is effortless for a controller to read business unit employees' thoughts when non-verbal communication is present. People can also politely interrupt each other and notice

each other's facial expressions if they have something to say. In budgeting discussions, this leads to maximized local knowledge sharing.

> *"If the company would solely operate in Finland, I would say that the face-to-face meetings would be slightly better for planning discussions." (Business Controller, Company B)*
>
> *"When you are face-to-face with someone, the other can maybe message something with facial expressions… that is left totally out from the virtual settings." (Business Controller, Company A)*
>
> *"One can take an eye contact or raise a hand to message that he/she has something to say in physical meeting room… but virtually one must usually interrupt someone." (Business Controller, Company C)*

By noticing the small facial gestures, the trust starts to evolve in the case companies. When the controllers and business units genuinely understand each other, a more critical strategic business partner role can be achieved, and the utilization of MCS increases (Järvenpää, 2001; Vaivio et al., 2006; Busco et al., 2006). The business understanding can be considered even the most essential task of a business controller in organizations since he or she is typically the only one, in addition to local managing directors, who has time to contemplate a business overview. The other local management group members need to concentrate on their areas of expertise, e.g., pricing or project management.

> *"Face-to-face meetings bring so much value to business controller role… the more you know the people, the more a strategic partner you become." (Business Controller, Scandinavia, Company A)*
>
> *"I have a motto that Business Controllers should know the business at least as well as the business unit itself… Head of Business Unit must have a sparring partner, and Business Controller is the only one who truly has time and insight for this." (Head of Business Controlling, Scandinavia, Company A)*

Achieving shared understanding between controllers and business units is particularly challenging for a new controlling unit member in multinational companies (MNCs) since the local business units might not trust the controlling function if they have not met them

physically. A controllers' primary task is to challenge the local business units, but this could make the business units think that they must preserve their knowledge not to get challenged too hard from the group level. However, once the shared understanding and trust is achieved, valuable insights to control function and budgets arise.

> *"I defend Scandinavia when I am having budgeting discussions, but in turn, I challenge the regions so that realistic view could be achieved… Most of the regions know this and know that we are very fair in Scandinavia." (Business Controller, Scandinavia, Company A).*
>
> *"Common understanding arises from the face-to-face discussions since they usually have some sort of informal edge that in turn generates trust between the stakeholders." (Head of Business Controlling, Scandinavia, Company A)*

Lastly, understanding is more comfortably achieved around the same table since a physical presence enables change management. A controller needs to convince the business units that realistic forecasts are essential, which requires a genuine presence in the field. Forecasts require realistic assumptions of the future, making strategic and tactical decisions be based on valid information. Moreover, change management appears to be especially challenging between business units and controllers since employees in the operations may first perceive management accountants as more number-driven people than real business partners who want to bring additional value.

> *"You can force people to make things, but if you want that they conduct their tasks well and take the ownership, you should be present, and close to people." (Business Controller, Scandinavia, Company A).*
>
> *"Face-to-face meetings are better first when creating the common understanding since during those discussions the myth "finance function does not understand the business" is broken." (Head of Business Controlling, Scandinavia, Company A)*
>
> *"We trust largely on data when forecasting… However, the subjective insights also play a role in decision-making, and those are more easily shared in physical conditions due to perhaps more iterative discussion. The depth of the knowledge might be deeper in some cases when working face-to-face." (Business Controller, Baltics, and Finland, Company A)*

However, as the next section will present, the pandemic had lasted only half a year when the thesis' interviews were conducted. Therefore, the controllers already knew the employees in the business units from the office or through traveling. Besides, no significant workforce changes in controlling departments had occurred in companies during the pandemic that would more probably happen in the long-term. Thus, challenges with virtual planning talk are perceived more as tactical instead of strategic - shared understanding and trust were already achieved, making the local knowledge flow only with minor limitations. Nonetheless, as illustrated later, the local knowledge might not be the same per se in virtual settings as before the pandemic, which could be more dangerous in the long-term.

4.3.1.2 Formal virtual planning meetings

Formal virtual planning processes seem to be conducted relatively efficiently in virtual settings in all case companies. The organizations were used to operate virtually with their global business units before the pandemic's emergence and consider that numbers are effortlessly flowing to the accounting systems. The planning talk is also painless due to the virtual collaboration tools' novelty: those include multiple new features that support the planning discussion. Furthermore, in the organizations, virtual communication during planning is sometimes considered even more efficient than face-to-face meetings - the communication is more transactional, and only things relevant to the subject are discussed during these meetings.

> *"For many tactical issues and normal daily tasks, virtual collaboration is very effective." (CFO, Company A)*
>
> *"Basic processes, like forecast review meetings, are now run in Microsoft Teams-application instead of offices… It does not feel that different." (SVP, Group Controller, Company B)*
>
> *"It is rather easy to determine and communicate why something costs 500k, one million or two million during calls." (Business Controller, Company C)*

Virtual planning talk occurs the best through applications supporting verbal communication. Employees can express themselves more freely in specific forums, and communication is much quicker than in e-mails or chats. Previously achieved trust from the field plays undoubtedly a significant part in verbal communication. Business units might reveal things during the calls, which they would not reveal in written form. Operational employees seem to think more about

what they write in the messages, even speculating about different outcomes during the calls. The different scenarios can include information on upsides and downsides, which the controllers can utilize in their forecasts if they perceive it valuable enough. Consequently, these upsides and downsides probably include necessary tacit knowledge to some point (Panahi et al., 2013).

> *"I consider virtual calls much better for discussion purposes than e-mails… People tend to speak more freely and about "unofficial" matters." (Business Controller, Company B)*
>
> *"For instance, in calls, it is easier to explain verbally, what will be the changes in the market outlook from this day to the end of 2021… If I needed to write the same in e-mails, it would take much time." (Business Controller, Company B)*

4.3.1.3 Emerging digitization as a driver for enhanced virtual planning talk

The pandemic has brought multiple advancements in virtual budgeting discussions. Before COVID-19 and the vast utilization of virtual collaboration tools, controllers were not using all features available. For instance, calls were carried out mainly without videos and additional features, like poll questionnaires. However, the pandemic shook the organizations since they were required to work only in virtual settings that could not be replaced under no circumstances with face-to-face meetings. Especially, case Companies A and B started utilizing new virtual collaboration tools to a large extent since they were more familiar with the virtual settings already before the pandemic. The broader usage of collaboration tools seems to support local knowledge sharing when working virtually in organizations.

> *"If someone would have asked me that can we conduct everything fully virtually in the first week of March, I would have said that of course, we cannot… However, now we have found out the new tools and ways of doing things… Now we can deliver the same things as before the pandemic." (SVP, Group Controller, Company B)*
>
> *"We are now maybe better in utilizing these virtual collaboration tools, the features that they enable." (Director, Business Controlling, Company A)*

Company C, in turn, had achieved its global status more recently, needing to focus more on enabling remote working conditions for all its employees. The controllers were used to all their

key stakeholders sitting close to them physically and were not accustomed to resorting to an equal extent in virtual collaboration as Companies A and B. Indeed, they were used to some point, but the experience level among employees had more variance.

> *"In controlling we have not really taken any new virtual collaboration tools in use… I think we only improved our network connections when the pandemic emerged." (Business Controller, Company C)*

In Companies A and B, where the day to day digital communication was regularly occurring before the pandemic, the spectrum of new features was extensive. They started to use videos almost in all meetings, collaborating with Excels and PowerPoints inside the collaboration tool itself, and took many smaller features in use, like raising a hand or digital Post-it- notes. The screen-sharing mode especially helps in virtual planning talk since accounting-related matters need to be illustrated well due to numbers' vague nature (Goretzki et al., 2016). All in all, the novel collaboration tools could help the operational employees to perceive the forecasts' importance and consequently lead to higher trust towards the individual MCS (Busco et al., 2006). Organizations might even take some of the virtual features with them when face-to-face meetings are possible again.

> *"It might happen that even when we come back physically to the office, and we have a workshop, we might employ these electrical Post-It- notes since then no one needs to transcribe the sketches." (SVP, Group Controller, Company B).*

Both virtually progressive organizations rely on Microsoft Teams- application with their collaboration. It seems to be more advanced to its competitors, such as Google meet or Zoom - it enables all the same features for verbal communication during budgeting but also facilitates collaboration through instant workbook modification. This feature creates a competitive advantage to Microsoft Teams since a business controller needs to support the business units with calculations and presentations. It is certainly convenient to have planning talk and budgeting tools in the same place. Its novel features enable the controllers and business units to share information even in a hurry:

> *"Microsoft Teams is improving all the time… For instance, one can now share his/her phone screen during meetings, which is wonderful!" (Business Controller, Scandinavia, Company A)*

4.3.1.4 Virtual settings' positive shock-effect.

COVID-19 shook the organizations to employ scenario thinking in their planning and focus more on the results generated. The increased emphasis has facilitated the controllers learning in the organizations. Company B took scenario thinking into action mainly due to the pandemic itself, but they would have needed specific planning tools before the pandemic. In its' industry, multiple forces are re-shaping the markets, and with scenario thinking, Company B could be prepared for different scenarios and create measure proposals for these situations. In their new scenario planning, Company B has four contrasting scenarios: downside, second wave, baseline, and upside. All scenarios are based on macro inputs, and the expected national GDP is always the main driver of the different scenarios.

> *"I have been long advocating the scenario analysis in this organization, but apparently it only required this type of crisis so that the understanding for my view emerged." (SVP, Enterprise Risk Management, and Real Estate, Company B)*

The scenario plans are sent to controllers to be commented on after preliminary scenarios, facilitating their learning. In Company B's scenario process, business controllers will comment on every scenario, forcing them to think about different scenarios and possibly communicate more with the operations. Local knowledge distribution could be improved by asking the right questions from business units (Henttu-Aho, 2018). Besides, the action plans linked to scenarios could increase an organization's ability to fit in its environment (Kloot, 1997; Goretzki et al., 2016). Company B will also implement scenario planning for its new budgeting system in the future since it is helpful when creating shareholder value. They also think it would be suitable to develop a scenario academy, where the business units' and business controllers' learning of scenario planning would be facilitated further.

> *"Quartal scenarios also help with our external communication since in our disclosers we might need to describe our possible downside risks." (SVP, Enterprise Risk Management, and Real Estate, Company B)*

Furthermore, virtual settings have made the controllers dig deeper into the occurred results' root causes. In Company A, they have started to follow up results more precisely, even at the individual employee level. In Company C, the emphasis on fixed costs follow-up has increased. Companies feel that better concentration in results is useful for the budgets and planning also after the pandemic.

> *"Now, we have started to follow-up fixed costs extra carefully." (Business Controller, Company C)*
>
> *"We have over 1,600 employees working in our Scandinavian operations…We have started to break their profit impact to individual levels, challenge them based on that and give recommendations…This has even increased my business understanding." (Head of Business Controlling, Scandinavia, Company A)*

Lastly, remote working conditions could have positively impacted controllers' and organizations' performance in the long-term. It seems that remote working is more acceptable now from time to time since virtual conditions have made the organizations and controllers understand which tasks are more efficiently conducted from home or the office. Some controller's tasks require more concentration and fewer discussions - more manageable at home.

> *"I think that many have now understood better which tasks are better to conduct from home and which from the office…Especially, in specialists case, I consider that this will certainly increase their and organizations' performance in the long-term (Business Controller, Baltics, and Finland, Company A)*

4.3.2 Virtual setting's multiple minor constraints on planning talk

Although formal planning talk appears to be compiled without significant issues and multiple new digital advancements support it, the transform also includes minor challenges that remain unsolved. The impacts are not perceived as significantly negative for local knowledge sharing in organizations but can affect its depth. There are detected six possible issues for virtual planning talk, which are the following: *experience, time management, group meetings, budgeting tools, complex operations,* and *wellbeing*. Next, all concerns are opened more in-depth.

4.3.2.1 Experience

The first limitation, *experience,* impacts the most on a controller's learning in virtual conditions. For instance, Company B's CFO has worked for almost 30 years in the industry in different accounting and finance-related positions and knows almost everyone in his current

organization. The experience has brought knowledge of cultural differences in the divergent geographical business units, helping this experienced management accountant navigate virtual settings during budgeting processes. The experienced controller knows how employees in business units typically behave, making him or her eligible to challenge them accordingly, even without both stakeholders' physical presence. Shared understanding and trust are already achieved previously in the field.

> *"I have a background from business units… It is a big asset if one has experience from the front-line." (Director, Business Controlling, Company A)*
>
> *"We have cultural differences in our business units… in one certain business unit the budgeting games are more common." (Business Controller, Scandinavia, Company A)*
>
> *"I do not see any problem receiving the operational knowledge from the field since I know all the stakeholders* (of quartal budgeting meetings) *... I believe it is different if one would be new in the organization." (CFO, Company B)*

A new controller does not know the stakeholders and does not always know whom to contact when working virtually. Consequently, virtual conditions are often more troublesome for the controlling departments' newer members. Case companies feel more demanding to do the landing process solely in collaboration tools since it is more laborious to get to know each other and processes. Albeit case companies feel that new controllers who have many years of experience in similar positions can survive relatively well. Only the industry is new, whereas the processes remain almost the same. Knowing basic processes helps a controller concentrate on actual tasks, making it to start planning talk quicker.

> *"In physical settings, the manager can be like a "shadow" for the newer members. One only has to follow what is happening, which makes the landing process more natural… whereas virtually the mentor has to sit in the call with the mentee, which restricts him/her from his/her other daily tasks." (Head of Business Controlling, Scandinavia, Company A)*
>
> *"It is pretty much a different thing if a new controller comes from a similar role from OMX Helsinki top 10 company than from a more junior position… only the industry might be new for them, but they are already familiar with the budgeting processes which*

> *makes the virtual landing process pretty much easier for them." (Business Controller, Company C)*

The experience is highlighted in virtual settings since an experienced management accountant has worked with different operations before and knows their everyday habits. For instance, previous sales experience helps the controller know that operations can be conservative with the expected results sometimes.

> *"When a controller talks with sales, there are always certain themes which are repeated… they might try to sell the lowest number possible, i.e., under-promise and over-deliver." (Business Controller, Company B)*

Controllers in Company A have also acknowledged that business units' forecasts are sometimes too conservative. They have noticed that mostly different cultural contexts affect the conservatism in the business units. They feel that without knowing the possible bias in their forecasts, the planning ability of budgets would be diminished. However, the management accountants have already met these business units physically, which has increased their awareness. Thus, cultural differences can impact more when controllers are not that experienced.

> *"We know that certain countries are always conservative with their forecasts and we have learned from the history that they perform better than they have promised" (Director, Business Controlling, Company A)*
>
> *"It would help to be there physically present in these countries… but since I already know these people, I was able to sense that they "were smiling" behind their screens even though the cameras were closed" (Business Controller, Scandinavia, Company A).*

Besides, a controller's previous experience from virtual planning talk matters as well. An organization facilitating virtual collaboration before the pandemic has provided its controllers' excellent learning basis. A digital native controller can use virtual tools efficiently, leading to enhanced business units' challenging. Consequently, local knowledge flows presumably better in organizations with digitally and professionally more experienced controllers.

> *"The official planning process itself has not changed the formal planning process much… We had already before the pandemic conducted planning processes partly virtually." (Business Controller, Company A)*

4.3.2.2 Time management

The second tension, *time management,* makes planning talk more demanding for all controllers, even for the most knowledgeable ones. Virtual settings require more scheduled meetings since organizations fear that the knowledge will not be distributed efficiently without formal virtual meetings. People do not meet each other in the offices, and the ad/hoc virtual communication is not yet rooted in the case companies. The pandemic has also partly affected the need for formal budgeting meetings since the world is changing quicker than in normal circumstances. However, the increased number of formal meetings can sometimes be inefficient and not distribute local knowledge as much as in physical conditions.

> *"I think I get enough info to my forecasts virtually… I just need to conduct calls frequently." (Business Controller, Company C)*
>
> *"This has led to that there are now half an hour slots reserved one after the another." (Director, Business Controlling, Company A)*
>
> *"In virtual settings, one needs to jump straight from one meeting to another." (SVP, Enterprise Risk Management, and Real Estate, Company B)*

Controllers have noticed that people reserve quickly too long slots from each other's calendars when working virtually. Significantly, the calendars got fully booked in the spring when the pandemic was only emerging, and the virtual settings were new for the employees. Controllers did not have enough time to be prepared for all meetings, leading possibly to too shallow challenging during planning talk. However, the situation has alleviated during summer 2020 since employees understood the issue and began to reserve empty slots from their calendars for their personal use.

> *"I truly need to reserve empty slots to my calendar so that I can first get acquainted with the topic so that I will not just wing answers or questions from my head." (SVP, Enterprise Risk Management, and Real Estate, Company B)*

The need for formal meetings has increased since people do not meet each other physically anymore. The management accounting professionals working in higher positions have noticed that their workdays are now full of meetings that take time from their other tasks. The increased number of meetings is also impacting standard controllers' workdays. For instance, the workdays have gone longer since increased meetings take time from their operational tasks.

> *"The meetings have extended my workdays… In the office, I think that I would have worked until 8 pm during the busy season in the spring, but at home, workdays lasted until 11 pm at that time (Business Controller, Company C)*

Increased virtual appointments have made some of the controllers silence their chats or use "do not disturb" mode in their virtual collaboration tools, managing to accomplish their month or quartal end forecasts in time. Controllers perceive that it is only somehow much more comfortable to go to colleagues' desks in the office and ask additional questions when needed. The decreased discussion could imply that the controllers or business units do not get all the information that they would possibly need. The local knowledge's depth decreases, and it does not move to forecasts if the ad/hoc questions remain unanswered.

> *"Now when everything is virtual, everyone is constantly in the meetings and you cannot disturb them with your questions." (Business Controller, Scandinavia, Company A)*
>
> *"Chat must be turn off sometimes during the day." (Business Controller, Company C)*

On the other hand, some management accountants feel that there is now more time to use for operational matters since the threshold of contacting is lower in the physical settings. However, this makes the information move slower since the ad/hoc questions are still asked and require answers. The controllers receive the same amount of e-mails as before, but the live verbal communication has only decreased. Some of the controllers might feel that their operational productivity has increased, but they might not perceive the negative impact of more passive information distribution on their budgets.

> *"I have noticed that the chatter takes time from the operational tasks at the office and the lunch breaks have shortened to 10-15-minute breaks instead of 45-minute breaks." (Business Controller, Company A)*

> *"We might exchange e-mails too much since if the message has a bit more "ambiguous twist" the e-mail chain might explode quickly to a chain that includes over 20 messages." (Business Controller, Company A)*

4.3.2.3 Group meetings

G*roup meetings* represent the third problem of the virtual meetings that could impact the planning talk. In case-companies, controllers perceive that there lays a distinct difference between virtual group appointments and one-to-one meetings. In group meetings, less interpersonal employees might not share their views comfortably in the standard office conditions, but their opinions can be completely lost when collaborating virtually. Case companies have noticed that usually, no one is pressured to answer any questions in virtual meetings. Whereas in office conditions, it is easier to make eye contact and see whether someone would have something to say. One-to-one virtual meetings are almost as conveniently handled as face-to-face meetings. Modern features seem to support knowledge sharing when only two people are involved.

> *"My own experience is that if there are enough employees in one meeting, there is easily always the one who does not say anything… I think that it is even easier for them to "be" in these virtual meetings." (Business Controller, Company B).*
>
> *"I think that if there are six employees in the meeting, the sixth person might express his/her opinion more easily in physical settings… In virtual settings, the threshold to unmute the microphone might increase." (Business Controller, Company C)*
>
> *"In my opinion, the virtual group discussions are not as participative as physical ones… Communicating becomes more challenging, and it requires much more work and different mediums so that all perspectives will be taken into account." (Business Controller, Baltics, and Finland, Company A)*

Simultaneously, some of the case companies have tackled the issue by adding clear routines to the planning talk. It means that all participants are required to answer the budgeting questions that are related to their area of expertise. Formalized speaking turns can increase virtual budgeting meetings' participation but do not permanently remove problems of virtual group meetings. The local knowledge sharing gets still restricted if all controllers do not dare to comment on some matters that do not directly concern them. Besides, the time is still relatively

restrained in these meetings due to the time pressures employees have in virtual settings. That can leave some voices out of the budgeting discussions.

> *"I do not consider that in virtual meetings, some people would speak more than others… In our service department's forecast meetings, we consider the device base's change, contract sales, and small repair sales… Everyone has their responsibilities and must provide answers to questions from their area of expertise… The process is very structured." (Business Controller, Company A).*

4.3.2.4 Budgeting tools

The *budgeting tools* represent the fourth issue that negatively affects the formal planning talk. Controllers should have tools supporting their tasks so that they can concentrate on value-adding planning talk. Despite the advancement of digital collaboration tools, all companies did not call into play all the features. For instance, in Company C, some employees started to communicate virtually after COVID-19's beginning, making their learning slightly slower.

However, the significant issues appear to be in physical equipment instead of the digital ones due to the virtual tools' vast development curve in spring 2020. Screens and other devices were collected from the offices, but the simulation of office conditions was more problematic than one could have expected. Controllers needed to work, for example, at their kitchen tables and with worsened network connections. The deteriorated working conditions could have affected the controllers' performance, reducing the time from the valuable knowledge sharing since all concentration needs to be put in the operational matters.

> *"If there is no specific space for work or proper work ergonomics at home, this might negatively impact the performance, and it is, of course, not good for wellbeing… Not everyone can work effectively at home." (SVP, Group Controller, Company B)*
>
> *"It affects my performance positively that there are two screens and electric table at the office… I have only one screen at home, and when I must swipe between many things with it, it certainly decreases my performance." (Business Controller, Company A)*

4.3.2.5 Complex operations

Virtual settings' fifth tension to knowledge sharing arises from *complex operations.* Some operational matters are more troublesome to be communicated through virtual collaboration tools. Strategic business controllers need to understand complex entities so that the forecasts can represent a truthful view of the operations. The understanding is especially challenged in industries where the operations involve many ambiguous dimensions.

> *"The whole process* (supply chain) *is pretty complex… and there are also other people involved than my virtual team in the process, and when not working at the office, the ad/hoc discussions with these people are left out." (Business Controller, Company B)*

For instance, in Company C's business environment, the competitive advantage arises from factors that are not straightforward to be apprehended at first sight. The situations change frequently, and without a physical presence, some parts of the information could remain hidden. Moreover, many employees in the operations are not used to utilizing virtual collaboration tools daily, impacting information distribution to budgets even more.

> *"When you are at the site, you live and breathe of the manufacturing… You know which pipe takes the stuff to which place, and thus, their* (site controllers) *understanding is at their own level… When one understands the context, the understanding of costs & revenues increases." (Business Controller, Company C)*

The operations' business environment behind budgets can sometimes be too heavy to explain through virtual collaboration tools. However, the controllers feel that they have solved their problems with "understanding" always somehow in virtual settings. The sincere challenges for local knowledge and budgets arise when the concepts are purely new or too vague for the business units or controllers to grasp, requiring constant iterative pondering, as discussed in section 4.3.3.

> *"Certain matters that cannot be performed routinely, and require more thought thinking in a group, are more fluently done at the office." (Business Controller, Baltics, and Finland, Company A)*
>
> *"Complex business matters, like some certain chemical reaction, is easier to perceive in physical conditions where one can draw things… To understand these matters in*

> *virtual settings, people should mail these explanations traditionally to me." (Business Controller, Company C)*

4.3.2.6 Wellbeing

Wellbeing represents the sixth negative impact of virtual budgeting meetings. Management accountants are left alone in their homes, and organizations cannot know their truthful mental situation. People are not yet accustomed to sharing their worries through chats or instant meetings, and strict time limits can affect the amount of shared informal knowledge during the meetings.

> *"I am concerned that we might not notice in virtual settings if someone is not feeling well or has issues." (CFO, Company A)*

It is undoubtedly more suitable for some to work from home. For example, remote working reduces controllers' commuting time, making some more productive at their home offices. Also, some controllers are used to working from home. They have established their home offices so that it is an efficient place to work like their desks at the office:

> *"I did a reasonable amount of remote work already before the pandemic since my team is multinational, and my presence at the office is not required… I do not feel that there lay major threats to my work tasks when working from home." (Business Controller, Company B)*

However, in some cases, virtual conditions have been recognized to impact controllers' wellbeing negatively. For instance, management accountants with small children or controllers recently settled in Finland have suffered from the sole virtual conditions. Also, it was noticed in multiple interviews that work-time and free-time deviation becomes more challenging at home. Without a proper home office atmosphere, it might not be easy to have enriched planning discussions.

> *"The families that have toddlers have been the biggest challenge during the pandemic… This Covid-time has been very stressful to them… Especially in the spring, when the schools and kindergartens were closed, and the children were hassling there when one tried to focus on the work tasks." (SVP, Group Controller, Company B)*

> *"One of my subordinates moved to Finland only at the end of the last year… He did not have any family or social networks developed here… We even discussed whether he should head back to his home country." (Director, Business Controlling, Company A)*

As an extreme measure, diminished wellbeing has led to cutting-off some of the controllers' work tasks, enabling the controllers to accomplish their essential tasks. Planning is considered necessary in all case companies and seen relatively easy to be carried out as noted above, but it remains hidden whether the diminished well-being also concerns the important planning talk.

> *"We have required them to do only the minimum and, in this way, we have rationalized their workload." (SVP, Group Controller, Company B)*

To summarize, the virtual settings have multiple minor limitations to local knowledge sharing during formalized planning discussions in digitized case companies where people know each other well. However, the same constraints of virtual settings apply to meaningful informal budgeting discussions as well, to the extent that it is possible to have informal discussions in virtual settings at all. The next section illustrates how meaningful casual conversations for budgeting have been jeopardized more than the official planning discussions.

4.3.3 Virtual planning talk in informal budgeting meetings

Local knowledge sharing is also a lot more than structured speaking turns (Nonaka, 1994; Nonaka et al., 1995; Barmeyer, 2019). Management accounting professionals also need lots of informal knowledge for their forecasts since it helps them realize more colossal business concepts. The informal meetings' nature has always been unstructured in organizations, which hints that the knowledge is often distributed by accident. Physical settings support better decisive informal knowledge sharing since offices make sudden collisions to happen.

> *"Why would we have hubs, like Silicon Valley for technology firms or London for investment bankers, if no physical interaction would be needed... Alternatively, why are not all coders outsourced and the lines of codes just purchased individually?" (CFO, Company A)*

4.3.3.1 Meetings in the field and traveling

Formalized budgeting meetings, like quartal or monthly forecasting processes, are effective in virtual settings, but typically only a specific agenda is addressed during these meetings. A management accounting professional and business unit employee are busy going to their next meetings, and there is not much time for free and comfortable conversation. The open meetings in the field also create a shared understanding and trust, making the people speak more freely (Barmeyer, 2019). Consequently, budgets' planning ability increases when this personal trust moves to the accounting systems (Kloot, 1997; Busco et al., 2006).

> *"In virtual meetings, many things are left unsaid which truly could bring additional value… Going through structured agenda is one thing but around it lays lots of tacit information that is not shared formally and thus the depth of the knowledge suffers." (CFO, Company A)*
>
> *"Subjective views are slightly easier to share physically… These views that cannot be reasoned from the numerical data can sometimes affect, for example, sales forecasts since the sales-people can bring some novel insights from the field." (Business Controller, Baltics, and Finland, Company A)*

Organizations are accustomed to virtual collaboration with their international subsidiaries, but the swiftly changing global environment also requires business traveling. Insights arise from the local business units and customers, and it is not easy to summarize everything in one e-mail or phone call. During trips, a management accountant can have more time with the people in the field and hear their different local scenarios that would not get exposed over the phone. Traveling brings lots of understanding, which is troublesome to replace with virtual collaboration. The diminished business understanding seems to impact the forecasts:

> *"I have understood that people who travel a lot have "meeting debt" … They would fly again immediately if the situation would ease." (Business Controller, Company C).*
>
> *"Before the pandemic, one-third of my working time consisted of traveling, and there is no easy solution for replacing that… In budgeting, it brings the "depth knowledge" and understanding when I meet customers and our internal stakeholders from many different levels and geographical locations." (CFO, Company A).*

A special bond can be achieved between the different stakeholders overseas, colleagues and customers, by meeting them physically. Developed relationships lead to a blossoming connection that also carries during the virtual collaboration - favors can be asked, resulting in improved planning talk.

> *"A physical meeting is often the situation where one breaks the pure professional bond and creates "next level" colleague relationship that brings real additional value… For instance, then one dares to message later in the evenings or ask help immediately in the chat if needed." (Business Controller, Company C)*
>
> *"It is quite different to speak to each other after dinner or one e-mail. I cannot determine what is the reason there, but the physical meetings somehow create trust, openness, and understanding of the matters that are important to be discussed." (Business Controller, Scandinavia, Company A)*

Fortunately, controllers in organizations know their colleagues well in other countries and offices. Consequently, business environment understanding could be more challenged between the business units and customers, as discussed in section 4.3.3. However, the understanding is not only based on trust but also on accidental events that bring "crumbs of information" to the management accountants. There are no sudden meetings with employees from different departments in remote conditions, and the meetings are mostly formal budgeting meetings in the controllers' case. The informal meetings are especially crucial for business controllers that try to take their business understanding to the next level and achieve a more strategic role in the organization. Consequently, the companies feel that virtual informal meetings "should be more formalized" in the future if the COVID-19 would continue for a more extended period.

> *"Something should be changed if organizations would work purely from home…As a controller, I should be aware if someone would possibly need my help with something…Ad/hoc meetings with different departments in organizations should be turned into a somehow more structured form." (Director, Business Controlling, Company A)*
>
> *"One of my tasks is business partnering with the service department… We have not had any structured virtual meetings… We sit on the same floor in Helsinki, and I went previously many times in a week to have lunch with them where we exchanged ad/hoc ideas about the business together." (Business Controller, Company A)*

The informal meetings are not entirely missing in virtual settings, but those are not considered as effective as in the offices. Especially in the spring, when the pandemic emerged, different teams started to have virtual coffee breaks or lunches together. In these meetings, the management accountants feel that they can speak more freely about their thoughts, but one essential part from the informal meetings is missing: the controller does not typically discuss with people who have the local knowledge, the business units' employees. Instead, they have virtual lunches in their teams where no novel business understanding creation typically occurs.

> *"Some teams have even enjoyed dinners together virtually." (CFO, Company A)*
>
> *"It is not only about your team or the closest stakeholders. There are also lots of other people, and practically it is not possible to arrange certain virtual coffees with all these people." (Director, Business Controlling, Company A)*
>
> *"There is a significant number of employees in our organization with whom no one from my team interacts on a daily basis… but by the coffee machine, you might meet these people, and discussions with them make me understand the bigger picture of the business better." (Business Controller, Company C)*

The number of informal virtual meetings has also decreased from spring 2020 because of the tighter time schedules and controllers' tasks' character. Some controllers in the case companies can be considered individual contributors who do not have much time for virtual breaks. They need to concentrate on their operational tasks, decreasing their participation in virtual meetings. However, in the office, they met various stakeholders in the hallways, where the sudden knowledge sharing of business matters could have taken place (Barmeyer, 2019).

> *"I do not have much time to go coffee breaks…But I know everyone, and people tend to always talk to me when I bypass them at the hallways… I do not receive these ad/hoc questions the same way in the virtual settings. Those arise only if people have been in some virtual meeting together." (Business Controller, Scandinavia, Company A)*

On the other hand, for some controllers, the coffee breaks with colleagues have been essential parts of the day. The atmosphere gets relaxed in the coffee room since a controller takes a break from his/her operational role and has an open mind for broader discussion. The more relaxed character seems to make a controller absorb information from an operational employee better. The hierarchy level is missing from these casual conversations, leading to an improved

understanding of the business environment's complexities. The controllers can also take their problems to the coffee rooms and solve these iteratively with other stakeholders.

> *"We all know that always can be arranged formalized budgeting meetings, but, in the end, it might be that the common understanding is achieved the best by the coffee table through the iterative discussions." (SVP, Enterprise Risk Management and Real Estate, Company B)*
>
> *"The threshold of asking questions is lower in general at the office." (Business Controller, Company B)*

To put it briefly, local knowledge in budgets arises, in addition to formal budgeting meetings, also from the casual conversations with the business units in the break rooms and aisles of the office. Local knowledge aids a controller to perceive larger entities and create forecasts that include even the most complex issues. The formal meetings are carried out rather well in the case companies, whereas the value-adding informal meetings seem to have vanished almost totally. Consequently, even the most experienced controllers' understanding of the business overview could have slightly suffered.

4.3.4 Endangered local knowledge?

Improved virtual collaboration tools have enhanced the virtual local knowledge flow, but there are still multiple small adverse effects in formal and informal virtual budgeting meetings. Mostly, the informal meetings have disappeared almost completely. However, the controllers in companies consider that they have gained enough information for their forecasts. Nevertheless, how accurate is that information, local knowledge, that the controllers receive? The focus has been more on the controllers' end in previous sub-sections, but now it is also moved towards the remotely working operations. Nevertheless, the emphasis is not on the operations' employees' ability to provide information to the controllers since the controllers and business units know each other well. Hence, this sub-section concentrates more on explaining why the virtual settings reduce innovations and their flow to the budgets.

> *"The more complexity and ambiguity the topic includes, the less virtual collaboration can replace the physical settings." (CFO, Company A)*

It seems that especially innovations, local knowledge, answering market changes need the physical presence of colleagues more than a distribution of it. The reason might lie, especially in change management, which is more readily executed when people can react to each other's non-verbal signs. The management accountants in case companies cannot quantify it more comprehensively, but they feel that the employees should be primarily physically together when creating something new.

> *"It is much easier to create something new when working physically together…It is very difficult to implement some new process when you are working virtually and far away from the day to day operations." (Business Controller, Company C)*
>
> *"For instance, we implemented a new forecasting process to our business units in 2019… I would dare to say that the implementing process would not have worked without face-to-face meetings since change management requires that you react timely to employees' non-verbal expressions." (Business Controller, Scandinavia, Company A)*

It should be noted that the case companies have been required to conduct even some massive projects virtually. The controllers consider that everything is, in principle, possible to execute virtually, but it is only often more formidable. For example, Companies A and B renewed their strategies almost solely in virtual conditions, but both would have preferred physical conditions: virtual conditions require more time than a strategy process implemented at the office.

> *"We created our new strategy almost solely in virtual conditions… It was time to time difficult to create something new and simplistic enough in virtual settings… It requires more time." (CFO, Company A).*
>
> *"I do not feel that it would be completely impossible to work exclusively in virtual settings, but it would require multiple workshops and more regular meetings with the business units." (Head of Business Controlling, Scandinavia, Company A)*

Management accountants perceive the current virtual settings more as a tactical problem rather than a strategic one. They have not been required to create an atmosphere that would serve the local knowledge distribution long-term. For instance, as noted above, the informal meetings are almost entirely diminished, and there lay multiple minor issues with virtual settings and

knowledge distribution to budgets that have not been addressed comprehensively enough. Thus, the biggest problem lies in knowledge inside the operations and other stakeholders that the controllers "do not know that they would need." Moreover, vice versa, operations may not consider some knowledge essential to share in virtual budgeting discussions.

> *"In the virtual conditions, I maybe did not understand why a certain profit calculation mattered so much for the business… When we met physically again with business unit management, I understood how this could be utilized in client meetings as well when reasoning the pricing." (Business Controller, Company A)*

A substantial part of a controller's vital business knowledge behind budgets arises through development projects conducted with the business units. In these meetings, the innovations are shared iteratively, and the aim is to provide outcomes to certain business matters. In other words, the local knowledge evolves in these meetings when the business controllers and business units are sparring with each other. Eventually, the innovations move to the forecasts to represent the objective future. However, the case companies' controllers consider that these projects could be postponed and conducted when the pandemic and remote work relieves.

> *"We have put bigger development projects on hold in my team and other teams as well... Maybe we should start with them soon since we originally postponed them to the Autumn" (SVP, Group Controller, Company B)*
>
> *"We have a new service, and I was asked to calculate the profit impact of that to our results during the pandemic… I usually try to conduct these calculations as quickly as possible in the spirit of business partnering… However, that project was truly kicked off only after we came back to the office." (Business Controller, Company A)*

As above indicated, the absence of the development projects and enriched communication has unquestionably impacted only nominally to the organizations in the short term, but what would happen if the companies do not react quickly enough to the limitations of virtual planning talk? The pandemic and virtual conditions might continue for more extended periods, or new issues could emerge and wreak havoc in the organizations, forcing controllers to continue working remotely. The short-term findings demonstrate that if firms do not want to only continue in the status quo, development projects, informal communication, and fixed virtual communication should also be in place when working remotely.

> *"Once we had solved the challenges with our new service's profit impact together at the office, the business unit head noted: "Oh boy, after a long time I sense that our business is moving towards something new since it feels that in the last few months* (Spring 2020) *our business has mainly been stagnated." (Business Controller, Company A)*
>
> *"I think that virtual conditions cannot replace the physical settings for good even though one has met the closest stakeholders in the field… Open communication needs to be cherished and developed as well when the world changes… This is more difficult when working solely remotely." (Business Controller, Baltics, and Finland, Company A)*

There appears to remain no solution developed for virtual settings' challenges development projects, and in some cases, the only option has been to go back to the office. The pandemic was relieved in summer 2020, making the return possible. The possibility of returning to the offices represents the organizations' tactical approach, not solving the challenges with a more extended virtual collaboration.

> *"Some of my team members are currently having a workshop at the office." (Business Controller, Company C)*

In addition to iterative development projects, local knowledge has sometimes been noticed as burdensome to be collected in the first place from the external stakeholders when working virtually. Especially, pricing adjustments and new customer relationships seem to include complications in the organizations. The power of face-to-face meetings appears to affect the same way as to internal relationships between business units and controllers: a new controlling team member achieves the strategic role only after achieving the trust in the field. As a result, companies have occasionally diverged from their internal COVID-19 regulations and let the salesman in the field.

> *"Making and renewing contracts is easier to conduct face-to-face because those meetings include more humanity… Behavioral norms become more aggressive in virtual conditions… It is easier to stay tight, be more demanding, and unreasonable rather than compromise-seeking." (CFO, Company B)*

What if the pandemic would not have eased so that the salesmen could occasionally depart from the internal policies? How would the problems between the stakeholders be solved? How to detect the quiet protests of the customers and internal stakeholders? Would the best practice virtual collaboration enablers take more market share in the future? The answers to the questions remain hidden and open an avenue for further research. However, the predictability of the markets, i.e., quality of the forecasts, appears to dwindle if the organizations do not have suitable virtual tools and processes to collect local knowledge from the field.

5 DISCUSSION

The purpose of the thesis is to give indications for further considerations, whether virtual settings impact information distribution to budgets, i.e., planning talk. It examines the issue by shedding light on the possible alterations that virtual settings under COVID-19 have brought to local knowledge sharing in global manufacturing organizations' budgets. The phenomenon is reviewed with an exploratory case study that attempts to provide refinements to the relatively small amount of existing theory in the field of virtual local knowledge sharing. Moreover, the thesis concludes a preliminary overview of the current digital collaboration processes' limitations during the formal and informal planning talk, which can be considered as the primary information distribution mediums between controllers and business units when working remotely.

The findings of the digital collaboration tools' and processes' current state for the planning talk could aid the globally operating organizations when forecasting: they need to resort to certain digital practices already to some extent daily when trying to perceive the uncertain future. However, the author acknowledges that the thesis' case study consists only of three organizations, all having their individual contexts. In addition, the nature of the case study is cross-sectional. Therefore, it is certainly noticed that further research attempts should be considered before theorizing the findings for broader management accounting research or managerial purposes.

5.1 LOCAL KNOWLEDGE DISTRIBUTION DURING VIRTUAL PLANNING TALK

Local knowledge stands for value-adding insights that operational units have (Polanyi, 1966; Nonaka, 1994; Nonaka et al., 1995). Employees in business units have achieved local knowledge through their direct participation in the field and thus learned what factors sincerely matter in a specific business environment (Vaivio, 2004). Consequently, it is a source of long-lasting competitive advantage if it can be distributed from individual employees to an organization's use (Huber, 1991; Lubit, 2001). Management accounting literature considers that mainly formal MCS meetings, like budgeting meetings, between business units and controllers, have helped release local knowledge from the field (Kloot, 1997; Henri, 2006; Henttu-Aho, 2018). A shared understanding and trust are achieved in these meetings, enhancing controllers' perception of a business environment behind budgets (Johansson et al.,

2003; Busco et al., 2006). Eventually, more objective forecasts that enable action proposals can be created (Goretzki, 2016). The forward-looking ability of budgets is especially highlighted in organizations operating in the middle of global disruptive forces (Becker et al., 2016; Goretzki et al., 2016; Palermo, 2018).

As in the previous theories, the case study suggests that genuine physical interactions between management accounting professionals and business units remain essential in formal budgeting meetings when distributing local knowledge from the field. By meeting the people in the operations, the trust increases between both parties, and shared understanding can be achieved (Busco et al., 2006). Organizations feel that face-to-face meetings are especially important in the case of management accountants and operations: in most cases, only through these meetings a strategic role of a business controller, who is perceived as an equal counterpart in discussions, can be achieved (Järvenpää, 2001; Vaivio et al., 2006). When personal trust and trust for accounting systems are present in discussions, the business environment's overview can be distributed to the forward-looking budgets.

However, the case study's results indicate that face-to-face meetings are often only needed in formal budgeting discussions when a controller and business units' employees meet for the first time. COVID-19 pushed almost all organizations in Finland to work remotely, and despite the "new normal," the case companies were able to notice only minor limitations to the local knowledge sharing in budgeting meetings. In contrast, previous management accounting theories appear not to take a stance whether it matters where these budgeting discussions occur, and the consensus seems only to be that these meetings are required for releasing the local knowledge from the field to budgets and other management control systems (Kloot, 1997; Busco et al., 2006; Henri, 2006; Becker et al., 2016; Goretzki et al., 2016; Palermo 2018; Henttu-Aho, 2018).

Consequently, the results of the exploratory case study could signal that local knowledge sharing during virtual budgeting discussions is possible, at least to some extent. Panahi et al. (2013) conclude that knowledge sharing in virtual settings has evolved in recent years due to better online and offline virtual tools. The thesis' case study endorses this view and provides possible deeper insights into how the improved digital collaboration tools can aid with the planning talk between controllers and operational employees. However, the notions are altogether pristine for management accounting research, although previous organizational

literature has already provided suggestions on how the local knowledge can be distributed in virtual settings (for instance, Faraj et al., 2011; Panahi et al., 2013).

In the organizations' forward-looking budgets, local knowledge is represented as numbers, making the nature of the budgeting discussions to bring tacit knowledge into explicit form. This notion follows Nonaka's (1994) "externalization" (tacit to explicit knowledge) definition. Therefore, Panahi et al.'s (2013) means of distributing tacit knowledge to explicit in virtual settings can be considered early suggestions on how virtual planning talk could occur. Nevertheless, the case study's results perhaps deepen their conclusions since the results illustrate why the virtual collaborative mediums that Panahi et al. (2013) mention support local knowledge sharing. Based on the case study in three organizations, planning talk is supported primarily due to digital collaboration tools' new features.

Screensharing, wider usage of videos, poll questionnaires, digital hand-raising mode, and joint editing of workbooks in the collaboration tool are examples of mediums that appear to support virtual planning talk. The face-to-face meetings remain preferred in the case companies, but once the "sensemaking" and "trust" in the field is achieved (Maitlis, 2005; Busco et al., 2006), the controllers feel that improved verbal digitalized discussions bring them the required amount of local knowledge to budgets. The controllers in the case companies have already met with the business units in different geographical locations. For instance, they have had business trips before the pandemic to the overseas, which has built the initial basis of trust between the controlling functions and operations. Consequently, the controllers have not gained their vast understanding of the business environments only through the formalized virtual budgeting meetings, as discussed in the next sub-section. Thus, the state of the digital collaboration processes and tools appears to require some refinements to replace the physical formal and informal discussions permanently.

5.2 LONG-TERM VIEW OF CURRENT DIGITAL COLLABORATION PROCESSES IN PLANNING TALK

Modern global organizations need to rely on efficient information distribution since the quick rotation of the workforce, distributed work arrangements, and emerging mergers & acquisitions create pressures for the organizations to fit in changing conditions (Argote et al., 2011). Management accounting research considers physical planning talk an efficient medium to distribute detailed information to budgets and action plans (Kloot 1997; Henttu-Aho, 2018).

However, the case study's results possibly expand this perception by concluding that the information distribution to forecasts is also possible in virtual settings to some extent. Nonetheless, the thesis' case study's results also indicate that there are currently still multiple minor limitations in the virtual planning talk, which may diminish the local knowledge's quality in budgets.

The case study concludes that there are perhaps six main restrictions for distributing the local knowledge to a full extent during virtual planning talk: experience, time management, group meetings, budgeting tools, complex operations, and wellbeing. The study's results indicate that noticed drawbacks during virtual conditions could impact controllers' performance. In turn, the decreased performance can diminish the planning talk's quality, leading to dwindled forecasts. The virtual settings seem to be incredibly tricky for new controllers, implying that planning talk probably suffers in the long-term when personnel changes should occur in controlling functions and business units. The noticed limitations seem to support Faraj et al.'s (2011) and Panahi et al.'s (2013) notifications that virtual settings do not provide a ground suitable for knowledge sharing as offices. However, the study's findings are only preliminary in management accounting research and should be tested with other quantitative and qualitative approaches.

The case study's insights also appear to hint to widen the discussion from the importance of formal budgeting meetings to formalized informal budgeting meetings in management accounting research. Barmeyer (2019) concludes in his Italian based case study that not all information sharing occurs formally in organizations. His study explores how local knowledge flows around the coffee break rooms in organizations. His findings follow Nonaka's (1994) notion that informal meetings are vital for local knowledge sharing as well. He explains that casual meetings are important by reducing hierarchy and creating chances to meet people from versatile teams. He seems to be one of the rare researchers who has empirically examined the value of formalized informal meetings. Although his notions are only emerging, they seem to turn out essential for planning talk's quality based on the thesis' case study.

Nonetheless, previous management accounting literature may have signaled that the formalized informal meetings are necessary for better budgets. As noted, physical meetings build shared trust in the controllers' case and enrich information distribution from the business units (Johansson et al., 2003; Busco et al., 2006). For example, Dent's (1991) and Vaivio's (2004) field studies illustrate how controllers have improved the operations by having constant

communication with business operations. The increased influence has occurred in offices that offer suitable surroundings also for informal meetings. Consequently, there have probably been multiple informal meetings that could have supported the operations' success in both field studies. However, informal meetings' importance for organizations' vital planning ability is not covered explicitly in previous management accounting theories. Thus, the conclusions of the case study should be considered with reservation.

Meetings in the field, business traveling, gatherings in the break rooms, and casual dinners with different stakeholders seem to increase management accountants' business understanding behind the budgets. In these more casual meetings, many things are said that can be left unsaid in formalized virtual meetings. Especially in current virtual conditions, the time limit pressures the controllers and business units to cover mainly certain agendas to have enough time to accomplish their daily operational tasks. Faraj et al. (2011) conclude that passion is the primary source of content creation in virtual communities, and several aspects could affect it. In a controller's case, the socially ambiguous identities seem to impact the most on planning talk. They do not meet all the possible stakeholders that they would meet in office conditions since the few informal virtual meetings are mostly conducted inside the controlling teams themselves - the passion for innovating decreases without value-adding informal meetings, not transferring local knowledge to foreseeing budgets.

The controllers significantly recognize the importance of non-formalized development projects to their business understanding. Management accountants do not directly feel that their short-term business overview behind the budgets had diminished during the virtual conditions. However, the exploratory case study suggests that diminished development projects have impacted the controllers' ability to perceive all the bottom-line impacts, and its effect might be multiplied in the long-term. The development projects seem to be more effortless to conduct in physical settings, and consequently, many of the projects were put on hold when the pandemic emerged. Some parts of the information could be missing from the budgets since management accountants and operations do not often meet casually in virtual settings. Consequently, organizations do not release all insights from the field to their budgets and action plans. Therefore, innovations could be left in individual minds (Lubit, 2001).

In informal physical meetings, controllers feel that they can see the non-verbal signs of the business units' employees and consequently ask the right questions. As Polanyi (1966) first put it, "We know more than we can tell." Case organizations consider that informal meetings have

not moved to virtual settings completely similar and feel that something should be changed if virtual conditions continue longer. This notion implies that multinational companies' current virtual settings do not support local knowledge sharing to a full extent. The problem lies mainly in the informal meetings' nature since they have happened suddenly with various stakeholders. The development meetings have especially involved lots of informal communication, such as lunches and break room meetings with the business units' employees.

Foreseeing budgets help organizations create a competitive advantage by enabling the right actions at the right time (Kloot, 1997; Henttu-Aho, 2018). However, the case study's emerging notions could indicate that the budgets' planning ability is endangered in current virtual conditions in the long term: current digital solutions can cover the planning talk to some extent, but it seems that some discussions are left completely out in digital circumstances. Hence, refinements in current digital collaboration processes appear to be needed, making the budgets to serve as value-adding as in physical conditions. The multinational companies', relying vastly on digital collaboration, local knowledge sharing could currently be endangered.

6 CONCLUSIONS

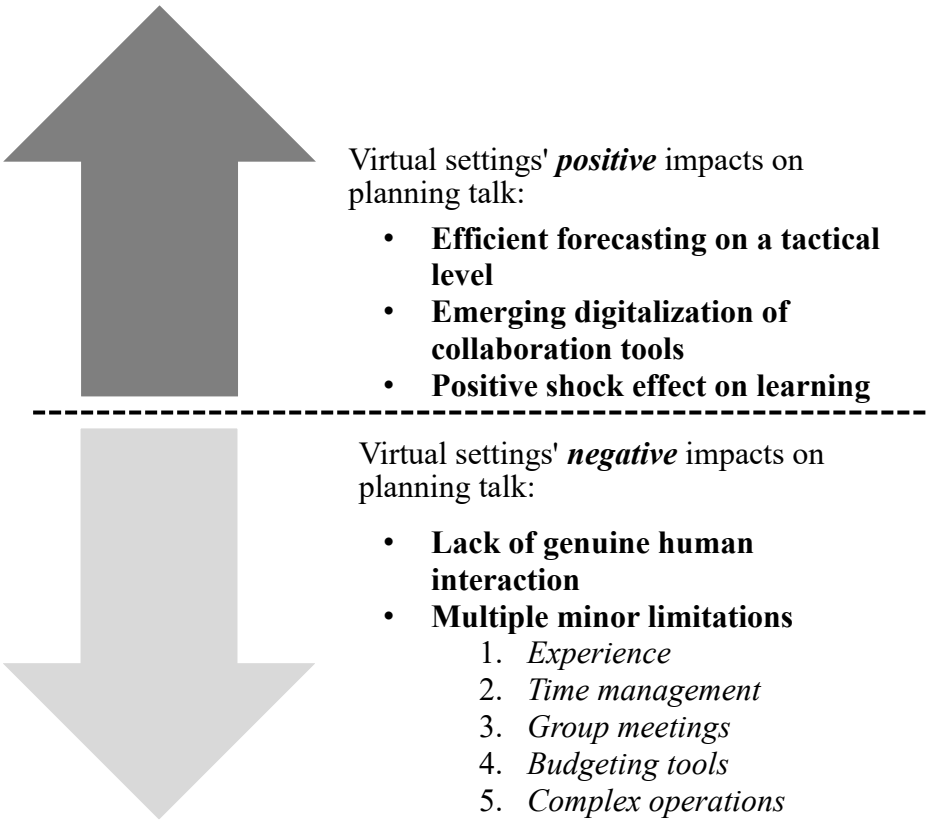

Figure 8 Framework: virtual setting's impact on planning talk

6.1 RESEARCH SUMMARY

Local knowledge represents insights arising from an organization's operational levels (Polanyi, 1966; Nonaka, 1994; Lubit, 2001; Vaivio, 2004). Innovations help an organization respond to internal and external changes in its business environment. Ideas should be spread freely in all organizations, particularly in multinational companies that need to compete with numerous disruptive challenges. Previous management accounting research considers that the challenges can be detected and conquered with budgeting's predictive ability (Kloot, 1997; Becker et al., 2016; Goretzki et al., 2016; Palermo 2018; Henttu-Aho, 2018). Budgets need plenty of inputs from the operations, making an information distribution process to budgets play an essential part in organizational learning. The value-adding inputs to budgets arise most commonly through formal and informal verbal interactions, planning talk between controllers and business units, typically taking place at offices (Goretzki et al., 2016; Henttu-Aho, 2018). However,

when the COVID-19 emerged in spring 2020, all planning talk shifted to be virtual, and the "new normal" in budgeting practices began.

The thesis' exploratory case study in three global manufacturing organizations illustrates how virtual settings have brought advantages and shortcomings to organizations' iterative budgeting processes. At first, the general tone from the controlling functions signals that the budgeting and planning talk have sometimes been conducted more efficiently in virtual organizations. The controllers feel that the virtual meetings are more effective since side paths are not taken that often in virtual discussions. As a result, information moves more transactionally between the stakeholders, and more time can be used for the tactical budgeting topics. The improved digital collaboration tools, including multiple supportive features for the budgeting discussions, have been considered to create an atmosphere where the planning talk conditions are almost the same as in offices in the short-term.

Nonetheless, previous theories about information distribution note that genuine physical meetings create trust between stakeholders (Maitlis, 2005). Trust is essential in accounting, making operational employees and controllers achieve personal trust that transforms eventually into system trust - trust towards MCS (Busco et al., 2006). Face-to-face meetings are considered to build a shared understanding and share information more uninhibitedly in controllers' case (Busco et al., 2006; Goretzki et al., 2016; Henttu-Aho, 2018). The thesis' conclusions support particular views since it appears that controlling functions would still favor hybrid circumstances instead of solely virtual ones. Management accountants seem to consider that, especially when meeting someone the first time, it would be necessary to be physically there in the field to achieve the value-adding bond. After achieving a special connection, the controllers feel that the virtual settings serve almost as well during planning talk as the office conditions when gathering the insights to the foreseeing budgets.

However, when observing virtual planning talk more comprehensively, possible signs of danger begin to arise. First, there seems to lay limitations in virtual knowledge sharing based on the previous theories (Faraj et al., 2011; Panahi et al., 2013). However, the conclusion has been that the limitations are more disturbing than restrictive when sharing local knowledge: digital collaboration tools have improved vastly in previous years. In the short term, the situation resembles the controllers' case - the spirit in the controlling functions is that virtual settings have only a minor effect on planning talk and do not restrict its sharing in multinational organizations' experienced controlling teams. The six minor limitations to virtual planning talk

are *experience, time management, group meetings, budgeting tools, complex operations,* and *wellbeing*.

Instead of virtual planning discussions' quality, it seems that the more severe problems lay in the informal budgeting discussions that never take place in virtual conditions. A small amount of previous research has concluded that structured informal meetings are as essential for knowledge sharing as official ones (Nonaka, 1994; Barmeyer, 2019). Casual meetings can sometimes be even more fruitful than formal ones due to a reduced hierarchy and an unintentional nature of them where versatile employees can meet each other in a relaxed atmosphere. However, in management accounting research, there seem only to be signs that informal meetings serve for better budgeting due to a need for constant face-to-face interactions (Dent, 1991; Vaivio, 2004; Busco et al., 2006; Henttu-Aho, 2018). Thus, thesis' insights are entirely new for the management accounting research, and the possible importance of informal meetings to planning talk should be researched more comprehensively.

The thesis' results for management accounting research signal that informal development meetings, coffee breaks, and lunches have their role in the planning talk and can lead to better business environment adaption and long-term success. It appears that many important business topics are contemplated during informal meetings, enhancing a controller's business overview behind the budgets. The thesis' results indicate that the lack of informal meetings and business development appointments in virtual settings have decreased local knowledge's quality to some extent in budgets. In the organizations, there have been a small number of informal meetings in the virtual settings, but those have occurred mainly inside a controlling team rather than between business units and controllers. Also, the formal planning talk's minor limitations indicate that virtual conditions are not distributing insights to budgets efficiently enough. Consequently, the thesis suggests that local knowledge is virtually not distributed to the full extent in budgets. The results are especially important for multinational organizations that wrestle with constantly emerging challenges and need to rely vastly on digital collaboration. Extensive concentration on digital planning talk appears to be required from the organizations.

6.2 PRACTICAL IMPLICATIONS

The thesis offers several possible practical implications for organizations that need to rely on virtual planning talk. There are six possible limitations to knowledge sharing that a virtually

operating controlling team can face: *experience, time management, group meetings, budgeting tools, complex operations,* and *wellbeing.* The thesis also recognizes the value of informal meetings when budgeting and highlights that those should be secured in virtual settings. Next, recommendations to detected issues are presented.

First, an organization should invest a lot in virtual job landing processes in a new controller's case to reduce the significance of the needed experience. Besides, it would be noteworthy to secure that experienced controllers will remain in an organization since they have the vital knowledge of stakeholders from the field. Second, the controllers appear to be quite busy with their daily tasks. Thus, there should not be reserved too much time for one specific virtual meeting. Third, clear routines should be applied in planning discussions to share the various insights of stakeholders - i.e., adapting versatile roles of the moments (Faraj et al., 2011). Especially, employees should be embraced to interrupt each other with new digital features such as "hand-raising" if they have something to add to discussions.

Fourth, the state of the physical and digital budgeting tools should be observed in organizations, not affecting their ability to budget in the first place. The fifth recommendation follows point four since new digital collaboration features should be launched, helping a controller perceive complex operational matters. It appears that especially Microsoft Teams- collaboration tool supports planning talk when issues with increased complexity need to be communicated. Lastly, organizations should define clear routines to managers on how they should interact with their subordinates virtually. It seems that it is more demanding to perceive whether one has issues in personal or working life in virtual conditions, possibly impacting a controller's performance.

The thesis' main conclusion for future management accounting research is that the lack of informal meetings between controllers and business units can make the insights presented in budgets too shallow, decreasing budgets' predicting ability in the long-term. More casual budgeting meetings have occurred during coffee breaks and lunches in office conditions, but those remain almost non-existent in virtual settings. Therefore, an organization should concentrate the most on enabling a functioning virtual informal communication platform between operational employees and controllers. There are already advanced digital tools available for informal collaboration, but the organizations should also guide their employees towards using them more efficiently and highlight specific discussions' importance behind the planning talk.

6.3 LIMITATIONS OF THE STUDY

Several possible limitations of the thesis' case study should be considered when interpreting its results. First, only management accounting professionals are interviewed. In further research, it should be considered whether operational employees should be cross-examined as well. A particular approach could provide a more comprehensive overview of virtual planning talk between business units and management accountants. It would be value-adding to understand whether business units consider virtual settings equally harmful to knowledge sharing as controllers in the long-term.

The thesis includes only a limited number of case companies (3), of which all headquarters are in Finland. Moreover, all case organizations are multinational organizations that have somewhat efficient virtual collaboration tools in use. However, virtual planning talk could be more challenging in another context. Thus, planning talk's state in virtual settings should be examined with further case studies that include companies of different sizes and contexts before interpreting the results to a more considerable extent. The case study's results could also be tested with quantitative approaches since it could increase the generalizability of the thesis.

Most of the interviews were conducted virtually due to the restrictions that COVID-19 has brought to the organizations. Physical interviews could have ensured that the interviewer better detects the interviewees' quiet signals - non-verbal communication, like facial expressions of feelings, could have brought more understanding. The lack of perceptions might have increased the researcher bias that is always somehow already present (Scapens, 1990). [4]

Virtual settings have been in place in organizations only for a considerably short time (6 months) when thesis' interviews were conducted. Therefore, the cross-sectional nature of the thesis possibly restricts the applications for long-term conclusions. Consequently, longitudinal research approaches are required to examine whether the thesis' conclusions apply in the long-term. Digital collaboration tools and processes seem to continually evolve in organizations, perhaps positively impacting formal and informal virtual planning talk.

[4] However, the possible presence of increased researcher bias has been acknowledged and attempted to diminish by triangulation and gaining a holistic overview of the organizations (Section 3.2)

6.4 SUGGESTIONS FOR FURTHER RESEARCH

The thesis provides multiple new research avenues for the future due to the case study's exploratory nature. The case study's insights are only emerging views that should be tested with other qualitative and quantitative approaches. The acknowledged concrete shortcomings of the digital collaboration tools could be tested, especially with a quantitative approach to signal whether they apply in a broader planning talk context. Besides, different organizational contexts in further case studies could provide an enriched view of the planning talks' benefits and challenges in virtual settings.

The case study signals that organizations have noticed that something should be changed in virtual collaboration environment if the virtual settings continue longer. This notion implies that organizations will adjust virtual settings to imitate office conditions better, and as a result, the quality of local knowledge in budgets could improve in the future. Therefore, further qualitative longitudinal approaches are required to shed light on planning talk's quality in virtual settings.

Budgeting is probably not the only task of a management accountant that suffered from virtual conditions. Other MCS appear to require constant discussions with operations as well (Henri, 2006; Busco et al., 2006). Thus, it is likely that, if the results of the thesis hold in future research, virtual settings' limitations to collaboration could be extended to other MCS as well. Furthermore, the virtual setting's limitations to collaboration could be examined as a part of a bigger organizational context: multiple departments require efficient collaboration besides accounting function. Further insights could help organizations operate with improved efficiency in a more global and digitalized world.

The preliminary results also indicate that informal meetings between controllers and business units play a decisive role in budgeting. These meetings are not strictly related only to budgeting matters but appear to build a more comprehensive business overview for the controllers, resulting in a better planning ability of budgets. There seem to be no significant previous theories conducted on this matter. Therefore, the notion of the informal meetings' importance in budgeting could open a new avenue of research in management accounting.

Significantly, business development meetings with operations appear to increase a modern controller's business understanding behind budgets to a great extent. Organizations feel that business partnering is one of a controller's main tasks since they typically have time to analyze

a business environment thoroughly. Thus, they are increasingly involved when organizations try to implement new ideas. Consequently, lots of local knowledge appears to release through these meetings, making their relevance to better budgets highly probable. Thus, business development meetings' significance in planning talk should be examined in further studies comprehensively.

The business development meetings appear to have occurred in an unstructured form in case companies and seem to have diminished totally when organizations transformed to be virtual. Controllers feel that budgeting processes have continued virtually almost with the same quality as in the offices. However, they might not perceive "what is missing from the forecasts" if the meetings never occur. This notion might apply to an even broader extent to organizations – many might perceive virtual settings as effective as physical settings, in extreme cases even moving some of their operations permanently virtual, like Twitter (CNN, 12th of May 2020).

As the case study's results illustrate, the controllers eventually understood that their point of view had been partially myopic when working virtually. After returning to their offices, they perceived the business development meetings' value for their business understanding behind budgets: the informal communication between business units helped them when reasoning what truly matters for the business. This notion also represents the nature of management accountants: they are the ones who transform insights into numbers and evaluate business ideas' profitability. Business units appear to require a controller when they need to mobilize their insights inside an organization.

Consequently, the case study's results imply that iterative innovating has almost completely halted in virtual organizations - a business unit employee does not have a controller by their side in virtual conditions with whom they could spend lots of time during lunch breaks on pondering business issues. Routinized tasks are managed easily, but innovations, being the cornerstone of an organization's long-term success, appear to be rather challenging to mobilize in virtual settings. Moreover, the issue might not be only in innovations' distribution, but also in the local knowledge itself, requiring iterative development meetings in the business unit themselves: those might have diminished totally since complex matters seem to be more burdensome to carry out in virtual settings (23rd June 2020, Kauppalehti). Dwindling innovation in virtual settings calls for further research.

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9 APPENDICES

9.1 APPENDIX 1: LIST OF INTERVIEWS

Person interviewed	Company	Date	Duration (min.)
Chief Financial Officer	Company A	7th September 2020	56 (face-to-face)
Chief Financial Officer	Company B	21st September 2020	40 (virtual meeting)
SVP, Enterprise Risk Management and Real Estate	Company B	21st September 2020	52 (virtual meeting)
SVP, Group Controller	Company B	21st September 2020	45 (virtual meeting)
Business Controller	Company B	23rd September 2020	54 (virtual meeting)
Director, Business Controlling	Company A	24th September 2020	48 (virtual meeting)
Business Controller	Company C	5th October 2020	55 (virtual meeting)
Business Controller	Company A	12th October 2020	48 (virtual meeting)
Business Controller, Scandinavia	Company A	14th October 2020	50 (virtual meeting)
Head of Business Controlling, Scandinavia	Company A	19th October 2020	41 (virtual meeting)
Business Controller, Baltics, and Finland	Company A	28th October 2020	55 (virtual meeting)

9.2 APPENDIX 2: SEMI-STRUCTURED INTERVIEW FRAME

Learning and budgeting process(es)

1. Name, number of years in service, and occupation
2. Please describe the normal budgeting process(es) (e.g., Activity-based budgeting, Balanced scorecards, rolling budgets, other benchmarking methods, forecasts, etc.) in your company that you use for planning. Do you think that budgets are vital for your company? Why?
3. What kind of information is normally required from business units' management for the budgets, and how do you collect this information? (e.g., face-to-face meetings, e-mails, virtual meetings, surveys, observation, storytelling, etc.)

4. Please describe the general relationship between business unit management and controllers. Do you also have informal meetings with the business unit's management?

Learning and budgeting process(es) during remote working conditions

5. How the remote working conditions have changed the formal input collection process(es) for budgets? Please also describe the tools you use to collect the information when working remotely.
6. Has the relationship remained the same with the business unit management during remote working conditions? E.g., do you use the same amount of time to work with them around budgets and how virtual settings have affected the atmosphere? Do you challenge their views the same way as before virtual conditions?
7. How do you feel that collaboration tools (Microsoft Teams/Zoom/Google meet) have impacted the information distribution of budgeting matters compared to face-to-face meetings? Has the information flowed as "fluidly" as at the offices? Please also describe the pros and cons of these tools for budgeting matters.
8. Have the remote working conditions pushed you to work more with some business unit leaders and less with some during budgeting processes? What has happened to informal meetings with them?
9. Organizations and employees tend to protect the tacit knowledge to secure a competitive advantage. Do you feel as a controller that the information from business units has been "stickier" now when working in remote conditions compared to face-to-face interactions?
10. Have the variances of budgets improved or deteriorated when working remotely? What do you think causes that?
11. For CFOs and supervisors: Do you feel that motivated controllers and controllers who have had great performance reviews perform better in remote working conditions? (e.g., timely updated budgets and low variance)
12. Have you found any new and innovative solutions for sharing tacit information about inputs virtually? E.g., virtual communities like yammer?

13. Do you feel that remote working conditions are better for budgeting processes? Please explain your view